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ABSTRACT

This document describes a project to develop a 320-hour tractor trailer driver training program and a 20-hour commercial driver licensing upgrade training program. Of 34 graduates from the training program, 28 secured employment in the trucking industry. From August 1989 to June 1990, 725 students were trained in the upgrade training program with a 100 percent success rate on the National License examination. The five-page project report is followed by the program materials. The training program consists of two sessions. Session I covers laws; double and triple trailers; tank vehicles; and hazardous materials. Session II covers hazardous materials. The retraining program consists of four sessions. Session I covers law; control systems; basic control; shifting; backing; and speed management. Session II topics are visual search; communication; space management; night operation; extreme driving conditions; and hazard perception. Session III topics are pretrip and posttrip; air brakes; skid control and recovery; emergency maneuvers; and emergency reporting. Session IV covers cargo inspection; weights and balances; securing cargo; special cargo; combination vehicles; and curricula overview. Each session concludes with test-taking skills and a proficiency test with answer key. Each topic consists of some or all of these components: objectives; topic outline or information; and techniques/procedures and activities. (YLB)

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ED327698

PERFORMANCE REPORT

for
V199A90082

TRACTOR TRAILER DRIVER'S TRAINING PROGRAMS

A Cooperative Demonstration Program funded by the
Office of Vocational and Adult Education
United States Department of Education

September, 1990

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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Performance Report
V199A90082

Program's Purpose

The program's purpose is to demonstrate the following:

1. The proposed program model can provide the trucking industry with professional caliber/technically competent drivers.

2. That the partnership approach, curriculum planning process and methodology employed in New Hampshire to address this national need can work in other states.

Purpose Outcomes

The College was able, through the craft committee process to establish on-going communications with: New Hampshire Motor Transport Associations, Teamsters Local 633, New Hampshire Department of Safety, and state trucking employers. With the assistance of these groups, the College developed a training program for commercially licensed drivers who were required to obtain a new CDL (Commercial Drivers License) from the State of New Hampshire by passing an examination based on national testing standards.

In addition, the College was able to develop a 320 hour tractor trailer drivers training program. The cooperative partnership made it possible for the College to provide the trucking industry with educational resources which were non-existent prior to the project.

Program Objectives

Two project objectives:

1. A program for entry drivers.

2. An upgrade program for existing drivers confronted with licensing standards.

Specific program objectives:

1. Employment of safe driving practices.
2. Mastery of effective controls of a vehicle under motion.
3. Managing vehicles under extreme weather conditions.
4. Development of perceptual skills to recognize and deal with potential road hazards.
5. Development of manipulative skills to handle vehicles in daily and emergency situations.
6. Understanding of technical operations of vehicles and their systems.
7. Development of sufficient literary test-taking skills to enable the driver to not only pass the certification exams but also to be more effective in the administration of trucking related business.

Objectives Outcomes

1. A program for new entry drivers.

   A. The United States Department of Transportation's Model Curriculum for Training Tractor Trailer Drivers was adopted by the partnership and implemented. This program consisted of 320 hours of instruction and included:

   114 hours of classroom instruction
   126 hours of laboratory and range practices
   40 hours of behind the wheel driving
   40 hours of observation

   B. Enrollment Report

Term	Location	Male	Female	Number Completing
Fall	Berlin	11	1	5
	Nashua	8	3	11
Spring	Berlin	11	1	11
	Nashua	7	4	7
Totals:		37	9	34

   C. The advisory committee recommended that the program be replicated twice in Berlin and Nashua because of the availability of employment opportunities.

   D. Test score results for the new National License for our students based on terms in each location.

Term	Location	Average Test Scores
Fall	Berlin	93
	Nashua	93
Spring	Berlin	91
	Nashua	93

   E. Placement of graduates: A total of 34 individuals graduated from the program and of the number of graduates, 28 secured employment in the trucking industry for a placement rate of 82% at this time.

2. An upgrade program for existing drivers confronted with licensing standards.

   A. The College developed a twenty hour Commercial Drivers Licensing Upgrade Training Manual which focuses on:

   (1) Subject matter and tests for the written examination.
   (2) Instructional materials and course outlines.
   (3) Instructional strategies to address visual, kinesthetic and auditory learners.
   (4) A train the trainer program to train adjunct faculty from the industry.
   (5) From August 1989 to June 1990, a total of 725 students were trained with a 100% success rate on the National License examination.

(6) Training sessions were conducted in the following locations, on a rotating basis, as a sufficient number of drivers' anniversary dates for license renewals emerged: Berlin, Conway, Hooksett, Nashua, Portsmouth, Keene, Claremont and Lebanon. The College experienced problems, initially with the Department of Safety in testing drivers prior to their anniversary date for renewal. In February, 1990, the Department of Safety agreed to test drivers prior to their anniversary date. This produced a significant increase in enrollments in this program from March to June, 1990.
(7) The College and Department of Safety conducted a total of twenty-three informational meetings, state-wide, to inform drivers about the new CDL and to promote the program.
(8) One of the significant outcomes of this program focused on the industry's request for a separate Hazardous Materials course for their drivers. This course was developed during the Summer of 1990 and will be offered to the industry in the Fall.

The fact that this program was 100% successful, in view of the fact that students possessed limited test taking and literacy skills, suggests that an instructional program addressing the learning modalities must be incorporated into the program (see attached instructional training program).

Concerns

1. Three hundred twenty hour Tractor Trailer Drivers Training Program.

The analysis of this program points out several areas of concern that are associated with the U.S. Department of Transportation's Model Curriculum for Training Tractor Trailer Drivers.

A. Discrepancies between the instructor's and student's manuals.

(1) The two manuals do not correlate; the absence of a tracking mechanism makes the instructional and learning processes difficult.
(2) In many instances, the time allocations in the Federal manual for certain training areas are insufficient for the students to comprehend the material.
(3) In some cases the material is superfluous. This promotes boredom on the part of the students.
(4) The section of the manual which addresses hours of service is, based on the instructor's evaluation, insufficient and needs to be increased.
(5) Critical to this program is the absence of correlation between the instructor's and student training objectives. The absence of objectives creates omissions in training and does not provide a sense of continuity in the cognitive, affective and psychomotor learning domains.
(6) Misspellings in the instructor's and student's manuals are excessive.

B. Inadequacies in the testing of student proficiencies.

(1) The uniqueness of specific tests and hands-on demonstrations to determine the student's competency levels are not clearly delineated. The absence of sequential criteria suggest that the testing processes do not have established standards.
(2) No proficiency tests exist for basic controls.

(3) The proficiency documentation sheets in the federal manual are inadequate, being general, vague and do not list proficiency standards.

2. Upgrade Program for existing drivers confronted with Licensing Standards.

A. Unique population being served.

(1) Offer a remedial process for drivers who fail the proficiency tests.
(2) Arrange for oral test taking skills for drivers who have difficulty in reading or possess limited English speaking proficiency.

B. Bureaucratic barriers to be addressed.

(1) Work with the Department of Safety to overcome the barriers to "mass" testing of drivers prior to their anniversary date.

CURRICULA SHEET

N.H.T.C. BERLIN

SESSION I - NIGHT/DAY

SUBJECT: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, TANK

1. Orientation - Course/Subjects
2. Double/Triple Trailer
3. Tank
4. 1st Part Hazardous Material
5. Test Taking Skills

SESSION II - NIGHT/DAY

1. Recap Session I and Subjects
    - A. Double/Triple Trailer
    - B. Tank
    - C. 1st Part Hazardous Material
2. Hazardous Materials (Finish)
3. Test Daily Skills
4. Proficiency Test
5. Referral:
    - A. Upon successful completion of this course, student is prepared to progress to State CDL licensing test (HAZMAT, DOUBLE/TRIPLE, TANK)
    - B. Unsuccessful completion of proficiency test, student will be aware of shortfalls and should seek help.

SESSION I

Hazardous Material, Doubles/Triples, and Tank

1. Double/Triples
2. Tank Vehicles
3. 1st Part of Hazmat
4. Test Taking Skills

HAZARDOUS MATERIAL, DOUBLE/TRIPLES AND TANK

Orientation

I. Explain the reason for this Course!

We have been involved with the CDL licensing exam since it started in August. We have prepared and delivered numerous 20 hour courses that cover the basic tractor trailer test, to include: general, air brakes, and combination vehicles. We feel that so many drivers want to take more endorsements that we have put together this course, which includes HAZMAT, the Hazardous Endorsement Test, Tank Vehicles which goes hand and hand, Doubles/Triples. In the State of NH Triples are illegal.

We are also providing some gimmicks, better known as Test Taking Skills, we know that most of our drivers understand the material, but they haven't taken a test in many years.

The material is presented on two separate nights. The major reason is that the HAZMAT portion has a lot of material to remember and most of it is safety related. We have also broken down the course with a recap after the 1st night and TT Skills on both nights. There will be a proficiency test at the end to see how well the material was presented and learned.

HAZMAT, DOUBLES/TRIPLES, TANK LAWS

Legal Age

- You must be at least 18 years of age to get a CDL.
- You must be at least 21 years of age to haul hazardous materials.
- To drive interstate, you must be at least 21 years of age.
- To obtain a commercial driver learner permit, you must be at least 18 years of age.

Renewal of Hazardous Materials Endorsement

At each renewal, drivers who wish to maintain their license endorsement to haul hazardous materials or waste, must retake and pass the hazardous materials endorsement test. This will ensure that drivers are updated on any new safety regulations relative to the transportation of hazardous materials.

Other Safety Act Rules

There are other new Commercial Motor Vehicle Safety Act rules which affect drivers.

- You cannot have more than one license. If you break this rule, a court may fine you up to $5000 or put you in jail. Keep your home state license and return any others.

- If you are an experienced commercial driver and have a safe driving record, you may not need to take the skills test to get your CDL.

- You must notify your employer within 30 days of a conviction for any traffic violation (except parking). This is true no matter what type of vehicle you were driving.

- You must notify your motor vehicle licensing agency within 30 days if you are convicted in any other state of any traffic violation (except parking). This is true no matter what type of vehicle you were driving.

- You must notify your employer if your license is suspended, revoked, or cancelled, or if you are disqualified from driving.

- You must give your employer information on all driving jobs you have held for the past 10 years. You must do this when you apply for a commercial driving job.

- No one can drive a Commercial Motor Vehicle/after April 1, 1992 without a CDL. A court may fine you up to $5000 or put you in jail for breaking this rule.

- Your employer can not let you drive a Commercial Motor Vehicle if you have more than one license or if your CDL is suspended or revoked. A court may fine the employer up to $5000 or put him/her in jail for breaking this rule.

- All states will be connected to one computerized system to share information about CDL drivers. The States will check on drivers' accident records and be sure that drivers don't get more than one CDL.

- You will lose your CDL for at least one year for a first offense:
  - if you drive a Commercial Motor Vehicle (CMV) under the influence of alcohol or a controlled substance (for example, illegal drugs).
  - if you leave the scene of an accident involving a CMV you were driving.
  - if you used a CMV to commit a felony.

  If the offense occurs while you are operating a CMV that is placarded for hazardous materials, you will lose your CDL for at least 3 years. You will lose your CDL for life for a second offense. You will also lose your CDL for life if you use a CMV to commit a felony involving controlled substances.

- You will lose your CDL:
  - for at least 60 days if you have committed 2 serious traffic violations within a 3-year period involving a CMV.
  - for at least 120 days for 3 serious traffic violations within a 3-year period.

"Serious traffic violations" are excessive speeding (15 mph above posted speed limit), reckless driving, and traffic offenses committed in a CMV in connection with fatal traffic accidents.

- If you drive when your blood alcohol concentration is .04 percent or more, you are driving under the influence of alcohol. You will lose your CDL for one year for your first offense. You will lose it for life for your second offense. If your blood alcohol concentration is less than 0.4 percent but you have any detectable amount, you will be put out-of-service for 24 hours.

These rules will improve highway safety for you and for all highway users.

Assure Safe Drivers and Equipment

Drivers must pass a written test about transporting hazardous materials. To pass the test, you must know how to

- recognize shipments of hazardous materials
- safely load shipments
- correctly placard your vehicle
- safely transport shipments.

Learn the rules and follow them. Following the rules reduces the risk of injury from hazardous materials. Taking shortcuts by breaking rules is unsafe. Rule breakers can be fined and put in jail.

Inspect your vehicle before and during each trip. Law enforcement officers may stop and inspect your vehicle. They can also check your shipping papers. They will look for a hazardous materials endorsement on your driver's license.

Other Laws in New Hampshire

Triples not legal in New Hampshire.
Doubles - 28 ft, interstates only or approved roads.

SESSION: HAZARDOUS MATERIALS (HAZMAT), DOUBLE/TRIPLES, AND TANK VEHICLE

SUBJECT: DOUBLE/TRIPLES TRAILERS

TIME ALLOTTED:

PAGE: 1-1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. To understand and be able to define the princples relating to doubles/triples and the CDL requirements.	1.a. Triple law N.H.	1.a. Lecture CDLM pg. 3-3 Lecture CDLM pg. 1-1, 1-5, 1-8, 1-9, 3-2	1. Proficiency Test
	b. Coupling twin trailers	b. Lecture CDLM pg. 6-12	
	c. Uncoupling twin trailers	c. Lecture CDLM pg. 6-13	
	d. Couple/uncoupling triples	d. Lecture CDLM pg. 6-14	
	e. Brake chocks on combination vehicles (doubles/triples)	e. Lecture CDLM pg. 6-15 bottom	
	f. Walk around inspection of doubles/triples	f. Lecture CDLM pg. 6-16	
		2. Overhead Transparencies 1.9-16 1.9-17 1.9-18 1.9-20	

SESSION I
DOUBLES/TRIPLES TRAILERS

OBJECTIVE: To understand and be able to define the principles relating to Doubles/Triples and the CDL requirements.

TOPICS:
- A. Coupling Twin Trailers
- B. Uncoupling Twin Trailers
- C. Coupling/Uncoupling Triples
- D. Brake Check on Double/Triples
- E. Walk Around Inspection Doubles/Triples

TECHNIQUES/PROCEDURES AND ACTIVITIES:

- A. Lecture CDLM
  - Pg. 3-3 It is illegal to operate any triple trailer on New Hampshire's public roads. However, if you so desire, you may take the CDL "double/triple" endorsement test which will allow you to operate these vehicles in those states which allow them. See section 6 of this manual for the information needed to pass the "doubles/triples" endorsement test.
  - Pg. 6-12
  - Pg. 6-16
- B. Overhead Transparencies
  - 1.9-16, 1.9-17, 1.9-18, 1.9-30
- C. **COUPLING TWIN TRAILERS**

(NOTE: YOU WILL NOT BE TESTED ON COUPLING TWIN TRAILERS UNLESS YOU WANT TO GET A DOUBLE/TRIPLE TRAILER ENDORSEMENT ON YOUR LISENCE.)

1. **Secure Second (rear) Trailer**
   - a. If the second trailer doesn't have spring brakes, drive the tractor close to the trailer, connect the emergency line, charge the trailer air tank, and disconnect the emergency line. This will set the trailer emergency brakes (if slack adjusters are correctly adjusted). Chock the wheels if you have any doubt about the brakes.
2. **Couple Tractor and First Semitrailer**
   - a. Caution: For safe handling on the road, the more heavily loaded semitrailer must always be in first position behind the tractor. The lighter trailer should be in the rear.
3. **Position Converter Dolly in Front of Second (rear) Trailer**

    a. Release dolly brakes by opening the air tank petcock. (Or, if the dolly has spring brakes use the dolly parking brake control.)
    b. If distance is not too great, wheel dolly into position by hand so it is in line with the kingpin.
    c. Or, use tractor and first semitrailer to pick up the converter dolly:
        a. Position combination as close as possible to converter dolly.
        b. Move dolly to rear of first semitrailer and couple it to the trailer.
        c. Lock pintle hook.
        d. Secure dolly support in raised position.
        e. Pull dolly into position as close as possible to nose of the second trailer.
        f. Lower dolly support
        g. Unhook dolly from first trailer.
        h. Wheel dolly into position in front of second trailer in line with the kingpin.

4. **Connect Converter Dolly to Front Trailer**
    a. Back first semitrailer into position in front of dolly tongue.
    b. Hook dolly to front trailer.
        1. Lock pintle hook.
        2. Secure converter gear support in raised position.
5. **Connect Converter Dolly to Rear Trailer**
    a. Make sure trailer brakes are locked and/or wheels chocked.
    b. Make sure trailer height is correct. (It must be slightly lower than the center of the fifth wheel, so trailer is raised slightly when dolly is pushed under.)
    c. Back converter dolly under rear trailer.
    d. Raise landing gear slightly off ground to prevent damage if trailer moves.
    e. Test coupling by pulling against pin of number two semitrailer.
    f. Make visual check of coupling. (No space between upper and lower fifth wheel; locking jaws closed on kingpin.)
    g. Connect safety chains, air hoses and light cords.
    h. Close converter dolly air tank petcock and shut-off valves at rear of second trailer (service and emergency shut-offs)
    i. Open shut-off valves at rear of first

    trailer (and on dolly if so equipped).
   - j. Raise landing gear completely.
   - k. Charge trailers (push "air supply" knob in) and check for air at rear of second trailer by opening the emergency line shut-off. If air pressure isn´t there, something is wrong and brakes won´t work.

(NOTE: YOU WILL NOT BE TESTED ON UNCOUPLING TWINS UNLESS YOU WANT TO GET A DOUBLE/TRIPLE TRAILER ENDORSEMENT ON YOUR LISENCE.)

6. **Uncouple Rear Trailer**
   - a. Park rig in a straight line on firm level ground.
   - b. Apply parking brakes so rig won´t move.
   - c. Chock wheels of second trailer if it doesn´t have spring brakes.
   - d. Lower landing gear of second semitrailer enough to remove some weight from dolly.
   - e. Close air shut-offs at rear of first semi-trailer (and on dolly if so equipped).
   - f. Disconnect all dolly air and electric lines and secure them.
   - g. Release dolly brakes.
   - h. Release converter dolly fifth wheel latch
   - i. Slowly pull tractor, first semitrailer and dolly forward to pull out from under rear semitrailer.
7. **Uncouple Converter Dolly**
   - a. Lower dolly landing gear.
   - b. Disconnect safety chains.
   - c. Apply converter gear spring brakes or chock wheels.
   - d. Release pintle hook on first semitrailer.

CAUTION: Never unlock the pintle hook with the dolly still under the trailer. The dolly tow bar may fly up, possibly causing injury, and making it very difficult to re-couple.

D. COUPLING AND UNCOUPLING TRIPLE TRAILERS
   -Slowly pull clear of dolly.

(NOTE: YOU WILL NOT BE TESTED ON THIS UNLESS YOU WANT TO GET A DOUBLE/TRIPLE TRAILER ENDORSEMENT ON YOUR LISENCE.)

1. **Couple Second and Third Trailers**
   - a. Couple second and third trailers using the method for coupling doubles.
   - b. Uncouple tractor and pull away from second and third trailers.

2. Couple Tractor/First Semitrailer to Second/

Third Trailers

- a. Couple tractor to first trailer. Use the method already described for coupling tractor-semitrailers.
- b. Move converter dolly into position and couple first trailer to second trailer using the method for coupling doubles. Triples rig is now complete.

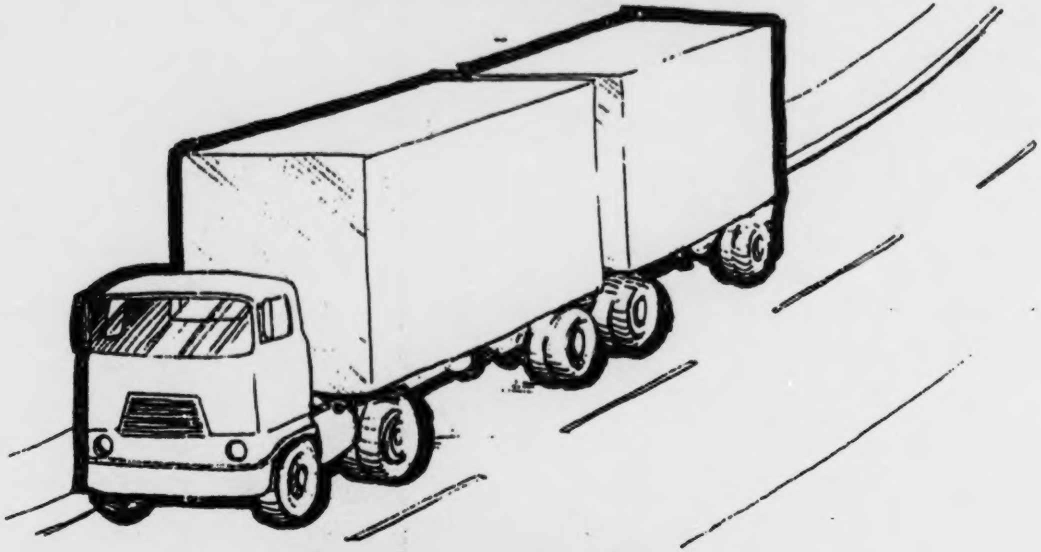
3. **Uncouple Triple-Trailer Rig**
   - a. Uncouple third trailer by pulling the dolly out, then unhitching the dolly, using the method for uncoupling doubles.

Refers to inspection

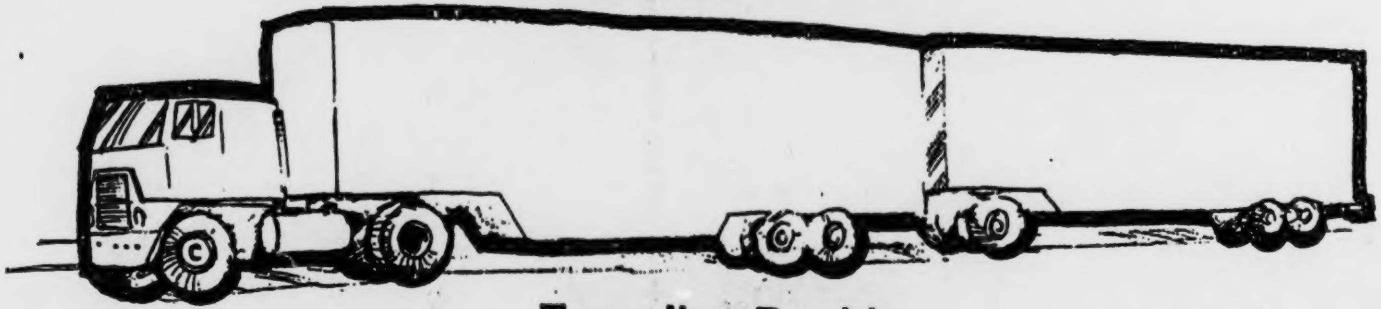
E. **Double and Triple Trailers**

1. Shut-off valves (at rear of trailers, in service and emergency lines):
   - a. Rear of front trailers: OPEN
   - b. Rear of last trailer: CLOSED
   - c. Converter dolly air and drain valve: CLOSED
2. Be sure air lines are supported and glad hands are properly connected.
3. If spare tire is carried on converter gear (dolly), make sure it's secured.
4. Be sure pintle-eye of dolly is in place in pintle hook of trailer(s).
5. Make sure pintle hook is attached.
6. Safety chains should be secured to trailer(s)
7. Be sure light cords are firmly in sockets on trailers.
8. Check that air flows to all trailers.
   - a. Use the tractor parking brake and/or chock the wheels to hold the vehicle. Wait for air pressure to reach normal, then push in the red "trailer air supply" knob. This will supply air to the emergency (supply) lines. Use the trailer hand brake to provide air to the service line. Go to the rear of the rig. Open the emergency line shut-off valve at the rear of the last trailer. You should hear air escaping, showing the entire system is charged. Close the emergency line valve. Open the service line valve to check that service pressure goes through all the trailers (this test assumes that the trailer hand brake or the service brake pedal is on), then close the valve. if you do **NOT** hear air escaping from both lines, check that the shut-off valves on the other trailer(s) and dolly(s) are in the **OPEN** position. You **MUST** have air all the way to the back for all brakes to work.

Twin Trailers



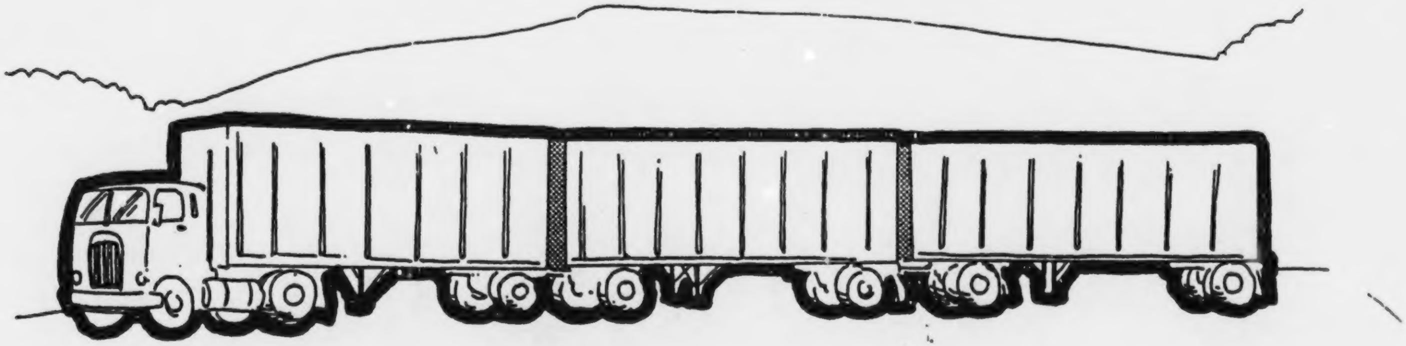
Western Doubles



Turnpike Doubles

Visual 1

Triple Trailers



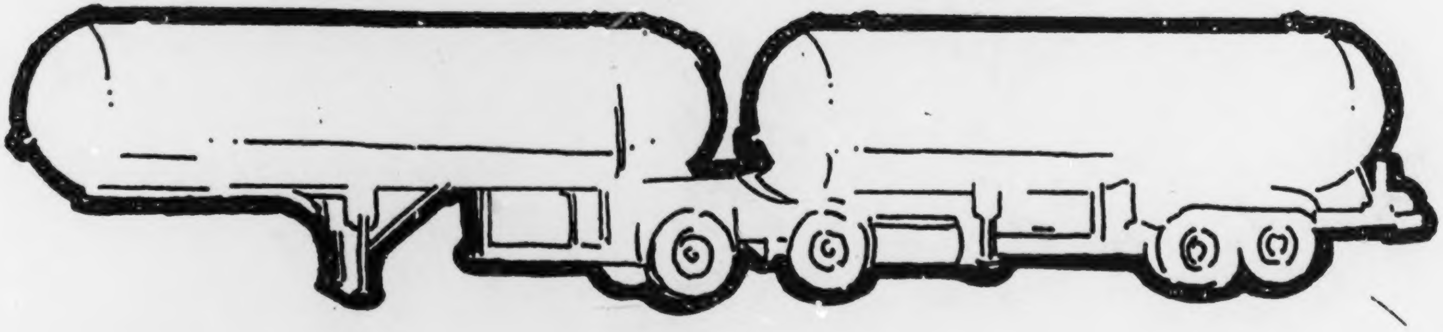
1.9-17

Visual 2

1.9-18

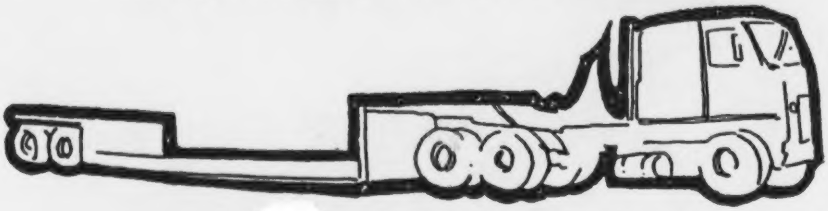
Visual 3

B-Trains

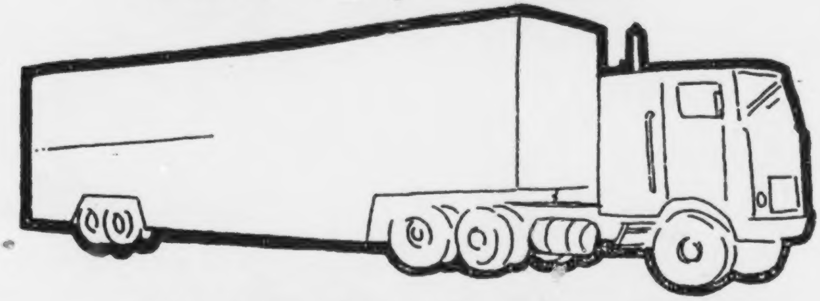


Visual 5

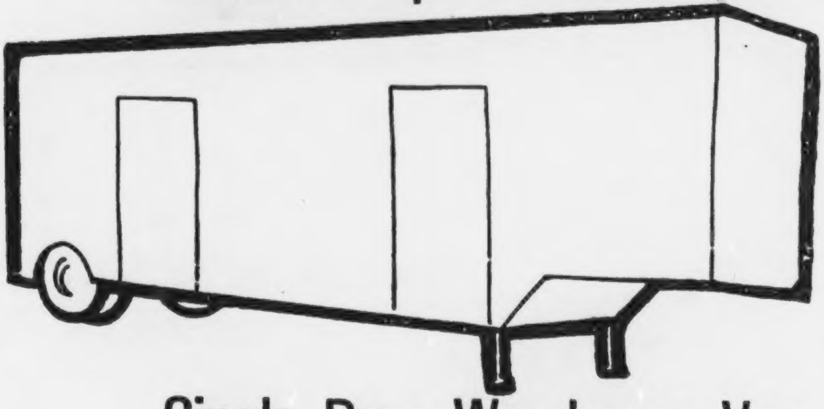
Low Clearance Vehicles



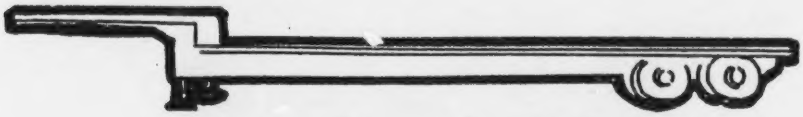
Double Drop Low Bed



Double Drop Furniture Van



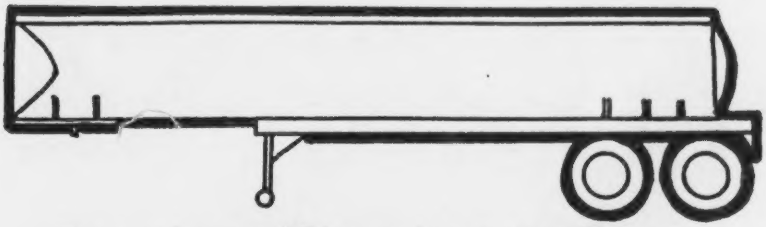
Single Drop Warehouse Van



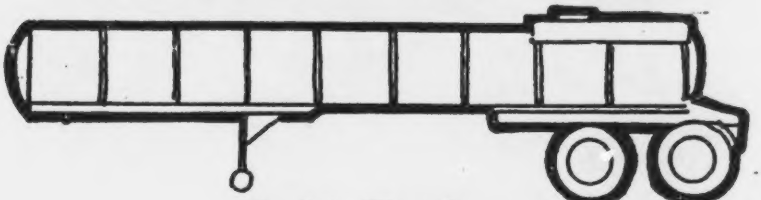
Single Drop Low Bed

Visual 7

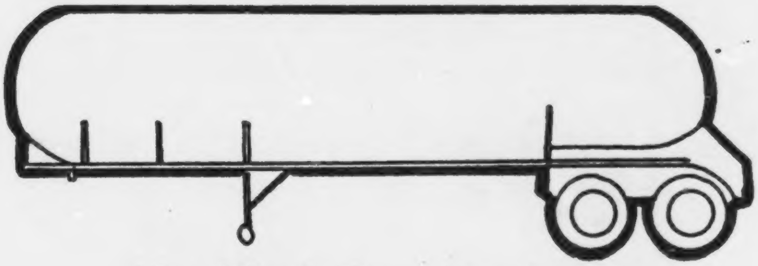
Examples of Tankers



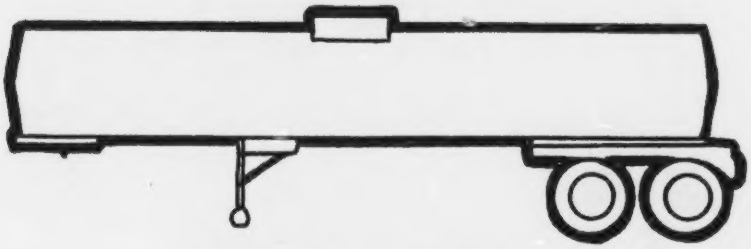
Petroleum/Chemical Tanker



Acid Tanker



Liquified Gas Tanker



Insulated Tanker

SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLE

SUBJECT: TANK SECTION

TIME ALLOTTED:

PAGE: 2-1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To understand and be able to define the principles relating to Tank Vehicles and CDL requirements.	1.a.Define Tank Vehicle b.High Center of Gravity c.Surge d.Bulkheads e.Baffles f.Smooth Bore Tanks g.Outrage h.Dense Liquids	1.a.Lecture CDL pg. 3.6-3.7 2.Overhead Transparencies 1.9-22 Figures 6-10, 6-11, 6-15	1.Proficiency Test

SESSION I

TANK SECTION

OBJECTIVE: To understand and be able to define the principles relating to tank vehicles and CDL requirements.

TOPIC(S):
A. Define the tank vehicle
B. High center of gravity
C. Surge
D. Bulkhead
E. Baffles
F. Smooth Bore
G. Outage
H. Dense Liquids

TECHNIQUES/PROCEDURES & ACTIVITIES:
Lecture CDLM pg. 3.6-37, 3-1, 3-2, & 3-3
Overhead 6-10, 6-11, 6-15

Tank Vehicle - means any commercial motor vehicle that is designed to transport any liquids or gaseous material within a tank that is either permanently or temporarily attached to the vehicle or chassis - to include, but not limited to cargo tanks and portable tanks. However, this doesn't include portable tanks with rated capacity under 1000 gallons.

Cargo Tanks - this term no longer is to be used with hazardous materials.

Tank Vehicles - weights - 26001 or more or any size that requires placarding is under the hazardous material regulation.
i.e. - Drivers of vehicles that transport no hazardous material (Milk, Water, etc.) in bulk with a rate below 26001 would not be required to have a tank endorsement or CDL.
Tank Vehicle with placards by virtue of hazardous gaseous or liquid cargo of **ANY** size must have proper CDL endorsement.

High Center of Gravity - high center of gravity means that much of the load's weight is carried high up off the road. This makes the vehicle top-heavy and easy to roll over. Liquid tankers are especially easy to roll over. Tests have shown that tankers can turn over at the speed limits posted for curves. Take highway curves or on ramp/off ramp curves well below the posted speeds.

Danger of Surge - Liquid surge results from movement of the liquid in partially filled tanks. This movement can have bad effects on handling. For example, when coming to a stop, the liquid will surge back and forth. When the wave hits the end of the tank, it tends to push the truck in the direction the wave is moving. If the truck is on a slippery surface such as ice, the wave can shove a stopped truck out into an intersection. The driver of a liquid tanker must be very familiar with the handling of the vehicle.

Bulkheads - Some liquid tanks are divided into several smaller tanks by bulkheads. When loading and unloading the smaller tanks, the driver must pay attention to weight distribution. Don't put too much weight on the front or rear of the vehicle.

Baffles - Baffled liquid tanks have bulkheads in them with holes that let the liquid flow through. The baffles help to control the forward and backward liquid surge. However, side to side surge can still occur which can cause a roll over. Be extremely cautious (slow and careful) in taking curves or making sharp turns with a partially or fully loaded liquid tanker.

Unbaffled liquid tankers (sometimes call "smooth bore" tanks) have nothing inside to slow down the flow of the liquid. Therefore, forward-and-back surge is very strong. Unbaffled tanks are usually those that transport food products (milk, for example). (Sanitation regulations forbid the use of baffles because of the difficulty in cleaning the inside of the tank.) Be extremely cautious (slow and careful) in driving smooth bore tanks, especially when starting and stopping.

Outage - Never load a cargo tank totally full. Liquids expand as they warm and you must leave room for the expanding liquid. This is called outage. Since different liquids expand by different amounts, they require different amounts of outage. You must know the outage requirement when hauling liquids in bulk.

A full tank of dense liquid (such as some acids) may exceed legal weight limits. For that reason you may often only partially fill tanks with heavy liquids. The amount of liquid to load into a tank depends on:

- the amount the liquid will expand in transit, and
- the weight of the liquid, and
- legal weight limits.

Dry bulk tanks require special care because they often have a high center of gravity, and the load can shift. Be extremely cautious (slow and careful) going around curves and making sharp turns.

High Center of Gravity

A high center of gravity means that much of the load's weight is carried high off the road. This makes the vehicle top heavy. It can roll over easily. Tankers carrying liquids are very easy to roll. Tests have shown that tankers can turn over taking a curve at the speed posted for that curve. Take highway curves or on-ramp/off-ramp curves well below the posted speeds.

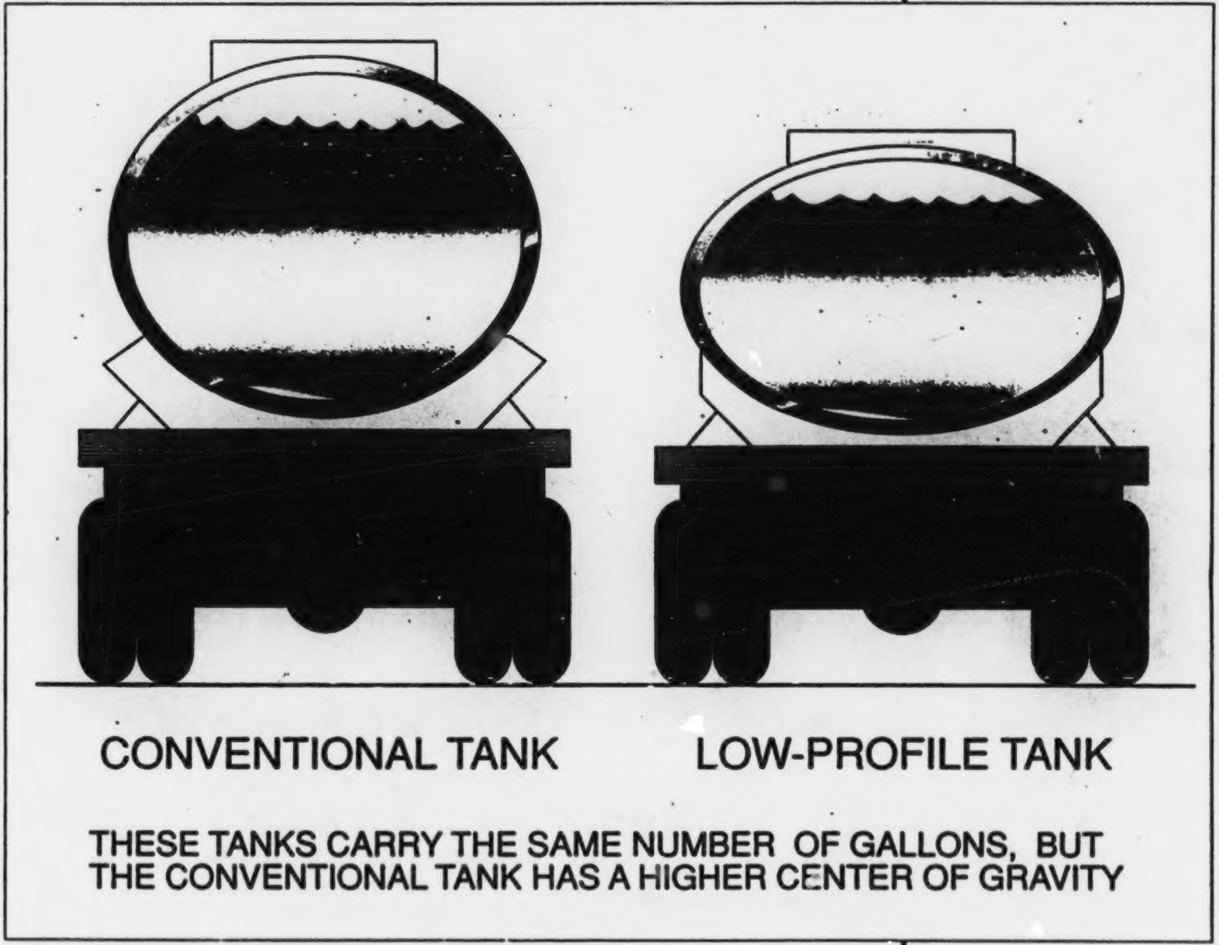

CONVENTIONAL TANK
LOW-PROFILE TANK
THESE TANKS CARRY THE SAME NUMBER OF GALLONS, BUT THE CONVENTIONAL TANK HAS A HIGHER CENTER OF GRAVITY

FIGURE 6-10: COMPARING THE CENTER OF GRAVITY OF TANKERS

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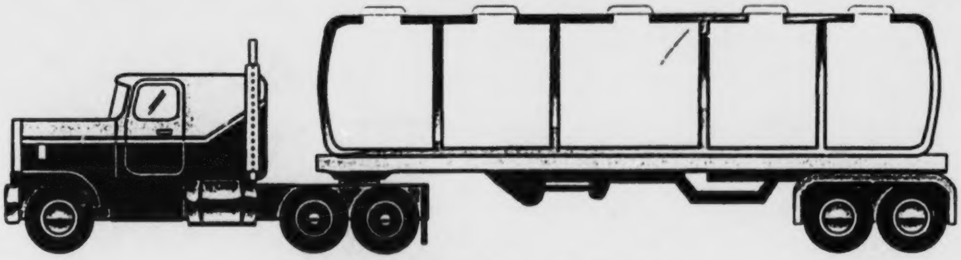
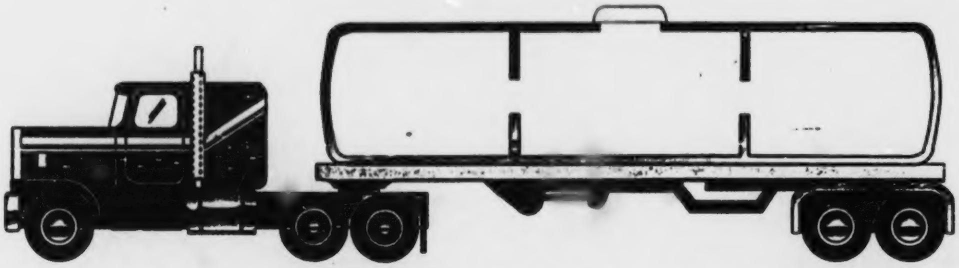
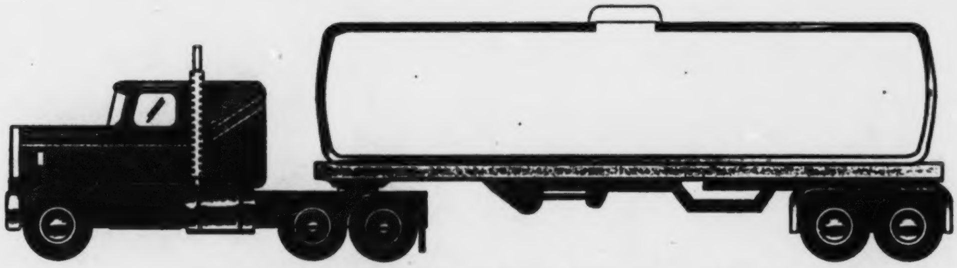


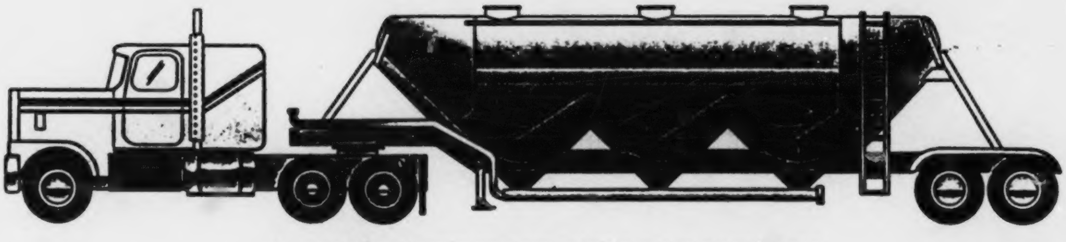
5 COMPARTMENT TANK



TANK WITH BAFFLES (TO REDUCE LIQUID SURGE)



A SMOOTHBORE TANK (NO BAFFLES)



3 COMPARTMENT DRY BULK TANK

FIGURE 6-11: TANK TRAILERS

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2. Look at the following diagrams of what happens to liquid cargo as you travel the highways. Study them. Then answer the questions that follow.

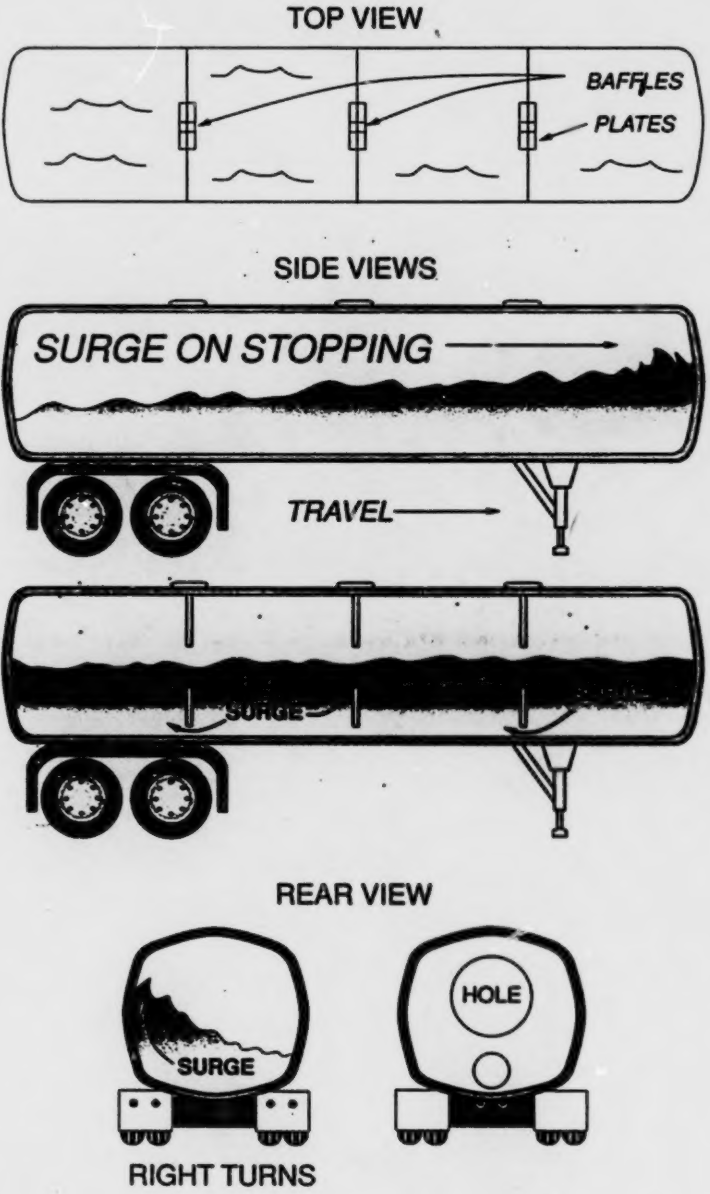
TOP VIEW
BAFFLES
PLATES
SIDE VIEWS
SURGE ON STOPPING
TRAVEL
SURGE
REAR VIEW
SURGE
HOLE
RIGHT TURNS

FIGURE 6-15: LIQUID CARGO EXERCISE

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SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLE

SUBJECT: HAZARDOUS MATERIAL

TIME ALLOTTED:

PAGE: 3-1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To attain the knowledge relating to Hazardous Materials and the requirement for the CDL test.	1.a. Intent of Regulations b.Transportation c.Communication Rules d.Loading & Unloading e.Bulk Tank Marking f.Loading & Unloading Driving & Parking g.Rules h.Emergencies	1.a.Lecture CDLM pg. 1-8 - 1-9 b.Lecture CDLM pg. 7-1 - 7-25 c.Wall charts d.Handouts	1.Proficiency Test

SESSION I

HAZARDOUS MATERIAL (HAZMAT)

OBJECTIVE: To attain the knowledge, relating to hazardous material and the requirement for the CDL Requirement Test.

TOPIC(S):
A. Laws and Penalties
B. The Intent or the Regulations
C. Transportation, Who does what?
D. Communication Rules
E. Loading and Unloading
F. Bulk Tank Marketing, Loading & Unloading
G. Driving and Parking Rules
H. Emergencies
I. Touch on Definition & Glossary

TECHNIQUES/PROCEDURES AND ACTIVITIES
A. Lecture CDLM pg. 1-8, 1-9, CDLM 2-48, 2-49
B. Lecture CDLM pg. 7-1 - 7-25

RULES

- You cannot have more than one license. If you break this rule, a court may fine you up to $5000 or put you in jail.
- You will lose your CDL for life if you use a Commercial Motor Vehicle (CMV) to commit a felony involving controlled substances.
- You will lose your CDL:
  a. for at least 60 days if you have committed two serious traffic violations within a three year period involving a CMV.
  b. for at least 120 days for three serious traffic violations within a three year period.

"serious traffic violations" are excessive speeding (15 mph above posted limit), reckless driving, and traffic offenses committed in CMV in connection with fatal traffic accidents.

- If you drive when your blood alcohol concentration is .04 percent or more, you are driving under the influence of alcohol. You will lose your CDL for one year for your first offense. You will lose it for life for your second offense. If your blood alcohol concentration is less than .04 percent but you have any detectable amount, you will be put out of service for 24 hours.

HAZARDOUS MATERIAL

Hazardous materials pose a risk to health, safety, and property during transportation. The Hazardous Material Table lists these materials. The rules sometimes require diamond shaped warning signs on vehicles with hazardous materials. These signs are called **Placards**.

You must have a commercial driver's license with a hazardous materials endorsement before driving vehicles with placards. To get the endorsement you must pass a written test about the hazardous materials rules. Section 7 explains these rules. By studying this section you will learn to recognize hazardous cargo, and to communicate the danger.

Everything you need to know to pass the written test is in this manual. However, this is only a beginning. Most drivers need to know much more on the job. You can learn more by reading the rules in State and Federal Regulations. You can learn more by attending training courses offered by your employer or others. Government and industry publishers sell copies of the rules. Union or company offices often have copies of the rules for driver use. Find out where you can get your own copy to use on the job.

Drivers must have special training before they transport flammable cryogenic liquids or highway route controlled quantities of radioactive material. Each driver's employer provides the training. The driver carries a dated certificate of training signed by the employer. Drivers must have had training within the last two years.

Some locations require permits to transport Explosive A & B, or bulk hazardous waste. States and countries may also require drivers to follow special routes. The Federal Government may require permits for special hazardous material cargo (eg., rocket fuel). Find out about permits and special routes for places you drive.

The Intent of the Regulations

Many hazardous material can injure or kill people. To protect drivers and others, the rules tell shippers how to package safely. Similar rules tell shippers how to transport, and unload bulk tanks. These are containment rules.

Shippers must warn drivers and others about a material's hazardous qualities. They put warning labels on packages and describe materials in a way that clearly warns of the risk. There are rules for drivers too. They must warn others if there is an accident or a leak. Placards are another way to communicate the risk.

A. Assure Safe Drivers and Equipment

1. Drivers must pass a written test about transporting hazardous materials. To pass the test you must know how to:
    a. recognize shipments of hazardous materials
    b. safely load shipments
    c. correctly placard your vehicle
    d. safely transport shipments
2. Learn the rules and follow them. Following the rules reduces the risk of injury from hazardous materials. Taking shortcuts by breaking rules is unsafe. Rule breakers can be fined and put in jail.
3. Inspect your vehicle before and during each trip. Law enforcement officers may stop and inspect your vehicle They will look for a hazardous materials endorsement on your driver´s license.

Hazardous Materials Transportation - Who does What?

A. The Shipper

1. The shipper:
    a. sends products from one place to another by truck, railroad, ship, or airplane
    b. uses the hazardous materials regulations to decide the product´s:
        1. proper shipping name
        2. hazard class
        3. identification number
        4. correct packaging
        5. correct label and markings
        6. correct placard
    c. packages the materials, labels and marks the package, prepares the shipping paper, supplies the placard
    d. certifies on the shipping paper that he has prepared the shipment according to the rules (Unless you are pulling cargo tanks supplies by you or your employer.)

B. The Carrier

1. The carrier:
    a. takes the shipment from the shipper to its destination
    b. checks that the shipper correctly named, labeled and marked the shipment
    c. refuses improper shipments
    d. reports accidents and incidents involving hazardous materials to the proper government agency

C. The Driver

1. The driver:
    a. makes sure the shipper has identified, marked, and labeled the product
    b. refuses leaking shipments

c. placards his vehicle when loading, if needed
d. safely transports the shipment without delay
e. follows all special rules about transporting hazardous material
f. keeps hazardous material shipping papers in the proper place

COMMUNICATION RULES

A. Definitions

Some words and phrases have special meanings when talking about hazardous materials. The meanings may differ from common use. The words and phrases in this section may be on your test. The meaning of other important words are in the glossary at the end of Section 7.

A material's hazard class reflects the risks associated with it. There are 22 different hazard classes. Appendix B tells the exact meaning of each hazard class.

Blasting Agent
Combustible Liquid
Corrosive Material
Etiologic Agents
Explosive A
Explosive B
Explosive C
Flammable Liquid
Flammable Gas
Flammable Solid
Irritating Material
Non-Flammable Gas
Organic Peroxide
ORM-A
ORM-B
ORM-C
ORM-D
ORM-E
Oxidizer
Poison A
Poison B
Radioactive Material

The shipping paper describes a shipment of hazardous material. Each item description on the shipping paper shows the material's hazard class. Shipping order, bills of lading, and manifests are all shipping papers.

After an accident or hazardous material leak, you may be unable to speak. Fire fighters and police can prevent more damage or injury if they know the hazards involved. Your life, and the lives of others, may depend on their quickly finding the shipping papers for hazardous cargo. For that reason the rules:

1. require shippers to describe shipments correctly on shipping papers
2. require carriers and drivers to put tabs on shipping papers related to hazardous material, or keep them on top of other shipping papers
3. require drivers to keep shipping papers for hazardous cargo:
   a. in a pouch on the driver's door, or
   b. in a clear view within reach while driving, or
   c. on the driver's seat when out of the vehicle.

B. Package Labels

Shippers put diamond shaped labels on hazardous material packages. These labels warn others of the hazard. If the diamond label won't fit on the package, shippers put the label on a tag. For example, compressed gas cylinders that will not hold a label will have tags or decals. Labels look like the example in Figure 7-1. A chart showing all the labels are at the back of this manual.

Placards are used to warn others of hazardous cargo. Placards are signs put on the outside of a vehicle to show the hazard class of the cargo. A placarded vehicle must have at least 4 identical placards. They are put on the front, rear, and both sides (see Figure 7-2). Placards must be readable from all four directions. There are 19 DOT specification placards. They are 10 3/4 inches square, turned upright on a point, in a diamond shape. Cargo tanks show the I.D. number of their contents on placards or orange panels.

C. Lists of Regulated Products

There are two main lists used by shippers, carriers, and drivers. Before transporting an unfamiliar product, look for its name on both lists. Some products are on both lists, others may be on only one. Always check both:

1. the Hazardous Materials Table, and
2. the List of Hazardous Substances and Reportable Quantities

The Hazardous Materials Table. Figure 7.3 shows a part of the Hazardous materials Table. Column 1 tells which shipping mode the entry affects. The next four columns show each material's shipping name, hazard class, ID number, and required labels.

Three different symbols can show in Column 1 of the table.
+ - shows the shipping name and hazard class to use, even if the product doesn't match the hazard class definition.
A - means the entry applies only to air shipments that are not a hazardous substance or hazardous waste.
W - means the entry applies only to water shipments that are not a hazardous substance or hazardous waste.

Column 2 shows the names of regulated materials. Entries are in alphabetical order so you can more easily find the right entry. Use the name of the material from the shipping paper. The table shows proper shipping name in regular type. The shipping paper must show proper shipping names. Names shown in italics are not proper shipping names. A shipper may only use the names shown in italics in addition to the proper shipping name.

Column 3 shows each material's hazard class or the word "Forbidden." Never transport a material that is "Forbidden." A material's hazard class is the key to using placards. You can decide which placard to use if you know these three things:

- -material's hazard class
- -amount being shipped
- -amount of all hazardous materials of all classes on your vehicle.

Column 3a shows each material's identification number. The identification number must appear on the shipping paper and package. It also must appear on cargo tanks. Police and fire crews use the number to quickly identify the material after an accident.

Column 4 shows the label shippers put on packages of hazardous material. Some products need more than one label. No label is needed where the table shows the word NONE.

The List of Hazardous Substances and Reportable Quantities. The DOT and the EPA want to know about spills of some products. These products are called **hazardous substances**. They are named in the List of Hazardous Substances and Reportable Quantities (see Figure 7-4). Column 3 of the list shows each product's reportable quantity (RQ). The shipper identifies RQs on the shipping paper. The letters RQ may appear before or after the basic item description. You or your employer must report any spill of a **reportable quantity** of these substances.

Starred* entries also occur in the Hazardous Materials Table. Look at the entry for Phosgene in column 1 of Figure 7-4. The star* shows that the Hazardous Materials Table also lists phosgene. Column 2 shows that Carbonyl Chloride is another name for the same product. The RQ for phosgene is 10 pounds. If there are 10 pounds or more in a single package, the shipment contains a reportable quantity. The item description on the shipping paper will include the letter RQ. This tells drivers that their employer must report spills of the shipment to the National Response Center. More information about the reporting rules appears later in this section. Figure 7-5 on the next page shows a correct shipping paper for Phosgene with all the entries required by regulation.

If the words INHALATION HAZARD are on the shipping paper or package, the rules require POISON placards. You must use POISON placards in addition to any others needed by the product's hazard class. Always show the hazard class placard and the POISON placard, even for small amounts.

The Shipping Paper.

The shipping paper shown in Figure 7-5 describes a shipment. The shipping paper for a hazardous material must include:

-page numbers if the shipping paper has more than one page. The first page must tell the total number of pages. For example, "Page 1 of 4."

-a proper description of the hazardous product.

-a "**shipper's certification**," signed by the shipper, saying he/she prepared the shipment according to the regulations.

The Item Description

If the shipping paper describes both hazardous and non-hazardous products, the hazardous materials will be either:

-described first, or

-highlighted in a contrasting color, or

-identified by an "X" placed before the shipping name in a column captioned "HM." The letters "RQ" may be used instead of "X" if the shipment is a reportable quantity.

The basic description of a hazardous product includes the proper shipping name, hazard class, and identification number, in that order.

Shipping name, hazard class, and ID number must not be abbreviated. The description must also show:

-the total quantity and unit of measure, and

-the letters RQ if a reportable quantity.

Total quantity can appear before or after the basic description. Packaging type and the unit of measurement may be abbreviated. For example:

10 ctns. Paint, Flammable liquid, UN1263, 500 lbs.

The shipper of hazardous waste must put the word WASTE before the name of the material on the shipping paper (hazardous waste manifest). For example:

Waste Acetone, flammable liquid, UN1090.

A non-hazardous material may not be described by using a hazard class or an ID number.

Shipper's Certification

When the shipper packages a hazardous material, he certifies that the package has been prepared according to the regulations. The signed shipper's certification appears on the original shipping paper. The only exceptions are when a shipper is a private carrier transporting his or her own product, and when the package is provided by the carrier (for example, a cargo tank). The glossary at the back of this manual shows acceptable shipper certifications. Unless a package is clearly unsafe, you may accept the shipper's certification concerning proper packaging. Some carriers have additional rules about transporting hazardous products. Follow your employer's rules when accepting shipments.

Package Markings and Labels

Shippers print required markings directly on the package, an attached label, or tag. The most important package marking is the name of the hazardous material. It is the same name as the one on the shipping paper. When required, the shipper will put the following on the package:

- the name and address of shipper or consignee,
- the hazardous material's shipping name and identification number,
- the labels required.

If the rules require it, the shipper also will put RQ or INHALATION-HAZARD on the package. Cartons with liquid containers inside may also have "this side up" markings. The labels used always reflect the hazard class of the product. If a package needs more than one label, the labels will be close together, near the proper shipping name.

Recognizing Hazardous Materials

Learn to recognize shipments of hazardous materials. To find out if the shipment includes a hazardous material, look at the shipping paper. Does it have:

- an entry with a proper shipping name, hazard class, and ID number?
- a highlighted entry, or one with a X or RQ in the HM column?

Other clues suggest hazardous materials:

- What business is the shipper in? Paint dealer? Chemical supply? Scientific supply house? Pest control or agricultural supplier? Explosives, munitions, or fireworks dealer?
- Are there tanks with diamond labels or placards on the premises?
- What type of package is being shipped? Cylinders & drums are often used for hazardous material shipments.
- Does the package bear a hazard class label, proper shipping name, or ID number?
- Are there any handling precautions?

Hazardous Waste Manifest

When transporting a hazardous waste, you must sign and carry a Uniform Hazardous Waste Manifest. The name and EPA registration number of the shipper, carriers, and destination must appear on the manifest. The shipper will prepare, date and sign the manifest. Treat the manifest as a shipping paper when transporting the waste. Only give the waste shipment to another registered carrier or treatment facility. Each carrier transporting the shipment must sign the manifest. After you deliver the shipment, keep your copy of the manifest. Each copy must have all needed signatures and dates, including those of the person to whom you delivered the waste.

Placarding

Attach the right placards as you load the vehicle and before you drive it. You may move an improperly placarded vehicle only in an emergency to protect life or property.

Placards must appear on both sides and ends of the vehicle. Each placard must be:

-easily seen from the direction it faces
-placed so the words or numbers are level and read from left to right
-at lest 3 inches away from any other markings.

First check that the shipper is using the correct hazard class for the shipping paper and package label. If you are not familiar with the material, ask the shipper or contact your office. To decide which placards to use, you need to know:

-the shipment's hazard class,
-the amount shipped,
-and the total weight of all hazardous materials in your vehicle.

There are two placard tables. Always use placards to transport **any** amount of material in Table 1.

Placard Table 1 - Any Amount

PLACARD TABLE 1

IF YOUR VEHICLE CONTAINS ANY AMOUNT OF...	**PLACARD AS...**
Class A explosives	EXPLOSIVE A
Class B explosives	EXPLOSIVE B
(not required if placarded Explosive A)	
Poison A	POISON GAS
Flammable solid-	FLAMMABLE SOLID W.
(when labeled dangerous when wet)	
Radioactive material	RADIOACTIVE
(YELLOW 111 label only)	

The hazard class in Table 2 need placard only if the amount transported is 1000 lbs. or more including the package. Add the amounts from all shipping papers for all the Table 2 products you have on board. You may use DANGEROUS placards instead of separate placards for each Table 2 hazard class when:

-you have two or more Table 2 hazard classes, requiring different placards that total 1000 lbs or more, and
-you have **not** loaded 5000 lbs or more of any Table 2 hazard class material at any one place. (You must use the specific placard for this material.)
-If the words INHALATION HAZARD are on the shipping paper or package, the rules require POISON placards. You must use POISON placards in addition to any others needed by the

product's hazard class. ALways show the hazard class placard and the POISON placard, even for small amounts.

BLASTING AGENTS, OXIDIZER, and DANGEROUS placards need not be used if a vehicle contains class A or class B explosives and is placarded EXPLOSIVES A or EXPLOSIVES B. A NON-FLAMMABLE GAS placard is not needed on a vehicle displaying a FLAMMABLE GAS or an OXYGEN placard.

SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLE

SUBJECT: TEST TAKING SKILLS

TIME ALLOTTED:

PAGE: 4-1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To acquire basic skills in test taking.	1.a.Introduction to TTS b.General Test Strategies c.Multiple Choice d.Skipping Part of the Test	1.Lecture - Text 1a-c.Overheads 1a-b.Handouts	1.Proficiency Test

/

SESSION I

INTRODUCTION TO TEST TAKING SKILLS

Objective:
To define the reason for test taking component.

Technique/Procedures:
-Overheads(2)
-Text of Introduction to Test Taking.

Content:
-Lecture on the elements to be mastered for scoring well on test.
-This section of our classes focuses on the third factor, skill in the mechanics of test taking. The bulk of the training focuses on the first factor and the second factor is essentially left up to the students. However, when a student possesses knowledge and has good physical and emotional health, skill in the mechanics of test taking can make the difference between mediocre and outstanding test performance.

SESSION I

1. Introduction to test taking skills.

2. Content of test taking skills Session I.

3. Strategies for test taking.

4. Understanding the importance of use of time.

5. Understanding the directions on a test.

THE SCORE A STUDENT ACHIEVES ON A TEST MAY BE INFLUENCED BY SEVERAL FACTORS:

1. KNOWLEDGE OF THE SUBJECT MATTER
2. POSSESSION OF GOOD PHYSICAL AND EMOTIONAL HEALTH
3. SKILL IN THE MECHANICS OF TEST TAKING

SESSION I

Strategies for Test Taking

Objective:
Define the strategies for test taking.

Techniques/Procedures:
-Overheads and Handouts pg. 165.
-Handout 187

Content:
-Discussion of strategies. Short explanations and question and answer opportunity.

GENERAL TEST-TAKING STRATEGIES

A. TIME-USING STRATEGIES

1. Set up a schedule for progressing through the test.
2. Work as rapidly as possible with reasonable assurance of accuracy.
3. Answer the easiest questions first.
4. On scrap paper, keep a record of the items to which you would like to go back.
5. Use time remaining after completion of the test to go back and look at your answers.

B. ERROR-AVOIDANCE STRATEGIES

1. Pay careful attention to directions. Determine the nature of the task.
2. Determine the nature of the question.
3. Ask the examiner for clarification, when necessary, if it is permitted.
4. If you are using a separate answer sheet, make sure to record the answer in the correct position on the sheet.

C. GUESSING STRATEGY

Don't make wild guesses. Many times you can get the correct answer by a process of reasoning and eliminating wrong answers.

D. MISCELLANEOUS TIPS

1. Only change an answer if you are sure the first one you picked was wrong.
2. Examine carefully all possible responses before attempting to choose the correct answer.
3. Use relevant content information provided in other test items.
4. Tackle items one at a time rather than thinking about the whole test.
5. Do not expect to find a pattern in the positions of the correct choices.

SESSION II

ATTACKING MULTIPLE CHOICE TESTS

Objective:
To show how to best answer multiple choice tests.

Techniques/Procedures:
-Overhead Transparency (pg. 188)
-Handout 188

Content:
-Lecture: Text (page 185 and 188).

/

ATTACKING MULTIPLE CHOICE ITEMS

Many tests contain multiple choice questions. These questions offer you four or five possible answers. Your job is to select the best answer. Wrong answers are often partly correct. These partly-true choices are inserted to force you to think and work carefully.

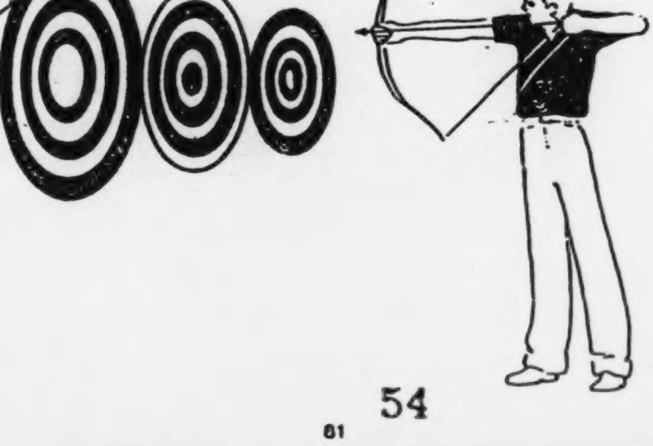
USE THESE METHODS TO ANSWER MULTIPLE CHOICE QUESTIONS CORRECTLY:

1. Read the question carefully. Identify the **key-phrase** in the question.
2. Mentally reject answers that are clearly wrong; concentrate on the remaining answers. The more answers you eliminate in this way, the better chance you have of answering the question correctly.
3. If several answers are plausible, use key words to help pick the correct answer.
   (POSSIBLE)

ASK ? important

4. If the question is in the form of an incomplete statement, try to complete the statement before you look at the suggested answers. Then see if the way you have completed the statement corresponds with any of the answers provided. If so, that choice is likely to be the correct one.
   (USE OF COMMON SENSE!
5. Use your head! Make (shrewd inferences.) With a little thought and the knowledge you have, answers can be reasoned out.

Instructor explaination For some words!



SESSION III

SKIPPING PARTS OF THE TEST

Objective:

To explain why and how a student skips parts of a test.

Techniques/Procedures:

-Sample Test Handout

Content:

-Do sample test. Give correct answers. Short discussion on why. (Answer: 1.Reduce anxiety 2.Use of time 3.Facilitate educated guessing) at end of discussion.

-Lecture: Some questions on a test seem easy. Answer those questions first. When you get to a question that seems too hard, skip that question. Answer the questions that you are sure you know. When you have time, go back to the questions you skipped.

As you go through a test do ________.

○ the easy questions first
○ the hard questions first
○ the easy questions last
○ each question in order

2. At first you should ________.

○ skip the easy questions
○ skip the hard questions
○ do every question
○ work very slowly

3. After you have answered all the questions you are sure about, ______.

○ stop working and look around
○ tell your teacher what you have done
○ go home and tell someone
○ go back and try the hard questions

7.3

. Try to answer __________ of the test questions.

all ○ part ○ six ○ ten ○

2. Reread __________ of the answers you picked.

before ○ all ○ for ○ under ○

3. Make sure you marked the __________ answer for each question.

wrong ○ best ○ second ○ last ○

4. Change an answer only if you are sure that you marked it __________ at first.

right ○ wrong ○ fast ○ slow ○

SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLES

SUBJECT: PROFICIENCY TEST (Session I)

TIME ALLOTTED:

PAGE: 5-1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To test the knowledge acquired in this session.	45 Questions	Written/Separate Answer Sheet	80% Passage (10 Wrong)

SESSION I

Proficiency Test

1. When driving with more than one trailer, which trailer should be the first one behind the tractor?
   A. The shortest trailer
   B. The heaviest trailer
   C. The lightest trailer
   D. It doesn´t matter

2. Which of these statements about quick steering movements and doubles/triples is true?
   A. Doubles/triples flip over from quick steering moves more easily than many vehicles.
   B. You should put on the brakes at the same time you perform quick steering movements.
   C. Countersteering is easier with doubles/triples than with most other vehicles.
   D. Doubles/triples are more stable

3. You are driving a 100 foot twin trailer combination at 50 mph. The road is dry and the visibility is good. You should keep at least ___ seconds of space ahead of you.
   A. 9
   B. 10
   C. 11
   D. 15

4. You should check the height of the trailer before connecting a converter dolly to a second or third trailer. The trailer height is right when:
   A. The trailer will be raised slightly when the converter dolly is backed under it.
   B. The center of the kingpin lines up with the locking jaws.
   C. The kingpin rests on the fifth wheel
   D. When the trailers are not lined up

5. You are driving a 100-foot truck with double trailers at 30 mph. The road is dry. Visibility is good. You should keep at least ___ seconds of space ahead of you.
   A. 9
   B. 10
   C. 11
   D. 12

12. If you want to couple a second trailer to your combination vehicle, secure it by using:
A. The trailer's spring brakes and emergency air brakes
B. Wheel chocks
[✓ C. Either of the above, if available]
D. Converter dolly

13. How can you be sure you supplied air to a second trailer?
A. Go to the rear of the second trailer and open the emergency line shut-off
B. Watch each trailer's air gauge for a drop of 30 psi
C. Apply the hand valve at 10 mph. You should stop in the same distance as a truck with one trailer at 5 mph
D. Push hard on your brake pedal

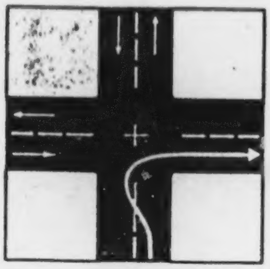
14. What is likely to happen if the pintle hook is unlocked while the dolly is still under the second trailer?
A. The air lines will rupture
B. The dolly tow bar may fly up
C. Nothing will happen unless the rig rolls forward
D. Your rig will not go

15. Converter dollies:
A. Often do not have spring brakes
B. Have little braking power because they are small
C. Usually need a glad hand converter
D. All the above

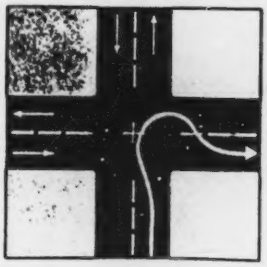
16. You want to hook your combination to a second trailer that has no spring brakes. To do this without wheel chocks you should:
A. Supply air to the trailer air system with the tractor and then disconnect the emergency line
B. Make sure the trailer will roll freely when coupling
C. Hook the trailer electric cord to a portable generator for braking power

17. You wish to turn right from one two-lane, two-way street onto another. The truck is too long to turn without swinging wide. You should turn like it shows in:
A. Figure A
B. Figure B
C. Figure C

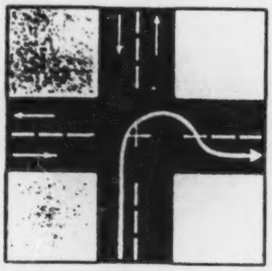
A



B



C



25. You are doing a walkaround inspection of a double- or triple- trailer rig. You should be sure the converter dolly air tank drain valves are ___ and the pintle hook is ___.
A. Open; free
B. Closed; latched
C. Open; latched
D. Closed; closed

26. Hauling liquids in tankers require special care for two reasons. One reason is the ___ center of gravity that tankers have.
A. Flat
B. Wide
C. High
D. Low

27. How would you expect a truck with a cargo tank that has baffles to handle on the road?
A. The truck will seem heavier than it really is
B. There will be less front-to-back surge than there is in a tanker without baffles
C. The truck will handle the same as a tanker without baffles

28. Side-to-side surge can cause:
A. Suspension system failure
B. Overspeeding
C. Rollover
D. None of the above

29. What does liquid surge do to the handling of a tanker?
A. Surge raises the wind drag of the truck
B. Surge can move the truck in the direction the liquid waves move
C. Surge lets you turn corners tighter
D. Surges are nothing to worry about

30. You need to be extremely cautious when driving smooth-bore tankers. This is especially true when you are:
A. Starting or stopping
B. Loading and unloading
C. Hauling milk or other food products
D. Driving along small streets

31. Empty trucks:
A. Stop quicker when you use only the emergency or parking brake
B. Have better traction when stopping than full ones
C. May require longer stopping distances than full ones
D. Will track differently

32. When you unload the smaller tanks of a tank with bulk-heads, be careful to check the:
A. Distribution of weight
B. Air to fuel ratio
C. Water content
D. Valves open and close tightly

40. When your cargo tank has baffles, what handling effect do you expect?
    A. There will be less side-to-side surge than there is in tanks without baffles
    B. There will be less front-to-back surge/ than there is in tanks without baffles
    C. There will be more slow surge than quick surge
    D. The surge will be the same

Read the following sentences carefully. Answer all items in the order given. For **True** mark **a**; for **False** mark **b**.

41. It is better to start answering items on a test as soon as the testing session begins.

42. It is best not to review any answers to questions.

43. It is easy to figure out what is expected of you without reading the directions.

44. If you are uncertain of an answer, it is usually best to make a thoughtful guess.

45. When responding to a multiple choice item, read all the possible choices before responding.

SESSION [✓ I] II III IV
(Circle Session Number)

PROFICIENCY TEST

Answer Sheet

Name: ______________________________ Date: ______________________

1. A [✓ B] C D
2. [✓ A] B C D
3. A B [✓ C] D
4. [✓ A] B C D
5. A [✓ B] C D
6. A B [✓ C] D
7. A [✓ B] C D
8. [✓ A] B C D
9. A B [✓ C] D
10. A B [✓ C] D
11. A [✓ B] C D
12. A B [✓ C] D
13. [✓ A] B C D
14. A [✓ B] C D
15. [✓ A] B C D
16. [✓ A] B C D
17. A [✓ B] C D
18. A B [✓ C] D
19. [✓ A] B C D
20. A [✓ B] C D
21. A B [✓ C] D
22. [✓ A] B C D
23. A [✓ B] C D
24. A B [✓ C] D
25. A [✓ B] C D
26. A B [✓ C] D
27. A [✓ B] C D
28. A B [✓ C] D
29. A [✓ B] C D
30. [✓ A] B C D
31. A B [✓ C] D
32. [✓ A] B C D
33. [✓ A] B C D
34. [✓ A] B C D
35. A [✓ B] C D
36. A B [✓ C] D
37. A B [✓ C] D
38. [✓ A] B C D
39. A [✓ B] C D
40. A [✓ B] C D
41. A [✓ B] C D
42. A [✓ B] C D
43. A [✓ B] C D
44. [✓ A] B C D
45. [✓ A] B C D
46. A B C D
47. A B C D
48. A B C D
49. A B C D
50. A B C D
51. A B C D
52. A B C D
53. A B C D
54. A B C D
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92. A B C D
93. A B C D
94. A B C D
95. A B C D
96. A B C D
97. A B C D
98. A B C D
99. A B C D
100. A B C D
101. A B C D
102. A B C D
103. A B C D

SESSION II

Hazardous Material, Doubles/Triples, and Tank

1. Recap
    - A. Doubles/Triples
    - B. Tank
    - C. 1st part HAZMAT
2. HAZMAT Finish
3. Test Taking Skills
4. Proficiency Test

SESSION: HAZARDOUS MATERIAL(HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLES

SUBJECT: RECAP

TIME ALLOTTED:

PAGE: 1-2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.Review material presented in the first session.	1.a.Doubles/Triples b.Tanks c.Hazardous Material	Lecture Instructions Text	1.Proficiency Test

SESSION II

Hazardous Material, Doubles/Triples, and Tanks

RECAP Session I

- -- 18-CDL 21 Haul HAZMAT
- -- 1 license only, up to $5000 fine
- -- Urine Test for pre-employment
- -- Lost CDL 60 days -2 serious traffic violations within 3 yrs (15mph over)
- -- 120 days loss of license - 3 serious within 3 yrs
- -- BAC .04 Hazmat, smell shutdown 24 hrs, 1 yr 1st DWI, life 2nd
- -- Vermont incidence slack adjuster out more than 1 1/2"
- -- Hauling HAZMAT $1500 fine
- -- Pre-Trip inspection must
- -- ICC physical
- -- No Triples
- -- Doubles only on I-system
- -- Doubles 28' max per trailer
- -- Gates another word rear valves
- -- Never unlock pintle hook while dolly still under trailer
- -- Crack whip affect (rearward amplification)
- -- Check air to all trailers
- -- Tank Vehicles
  - -- Baffles, bulkhead, smooth bore, surge, high center of gravity, outage, and dry bulk tanks

SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLES

SUBJECT: HAZARDOUS MATERIAL (HAZMAT)

TIME ALLOTTED:

PAGE: 2-2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To attain the knowledge relating to Hazardous Materials and the requirement for the CDL endorsement test.	1.	1.Lecture CDLM pg.7	1.Proficiency Test

Placard Table 2 - 1000 lbs. or more

PLACARD TABLE 2

IF YOUR VEHICLE CONTAINS 1000 LBS OR MORE...	PLACARD AS...
Class C explosives (with EXPLOSIVE C label)	DANGEROUS
Blasting Agents	BLASTING AGENTS
Nonflammable gas	NONFLAMMABLE GAS
Nonflammable gas(Fluorine)	POISON
Nonflammable gas(cryogenic liquid oxygen)	OXYGEN
Flammable Gas	FLAMMABLE GAS
Flammable liquid	FLAMMABLE
Flammable solid	FLAMMABLE SOLID
Oxidizer	OXIDIZER
Organic Peroxide	ORGANIC PEROXIDE
Poison B	POISON
Corrosive material	CORROSIVE
Irritating material	DANGEROUS
Chlorine in container with capacity of 110 gal. or more	CHLORINE
Combustible liquid in container with capacity of 110 gal. or more	COMBUSTIBLE

LOADING & UNLOADING

General Loading Requirements

-Do all you can to protect containers of hazardous materials. Don´t use any tools which might damage containers or other packaging during loading. Don´t use hooks.

-Before loading or unloading, set the parking brake. Make sure the vehicle will not move.

-Many products are more hazardous in the heat. Load hazardous materials away from heat sources.

-Watch for signs of leaking or damaged containers: LEAKS SPELL TROUBLE! Do not transport leaking packages. Depending on the material, you, your truck, and others could be in danger.

No Smoking. When loading hazardous materials, keep fire away. Don´t let people smoke nearby. Never smoke around:

EXPLOSIVES **OXIDIZERS** **FLAMMABLES**

Secure Against Movement. Make sure containers don´t move around in transit. Brace them so they will not fall, slide, or bounce around. Be very careful when loading containers that have valves or other fittings.

Do not open any package between the points of origin and destination. Never transfer hazardous products from one package to another. You may empty a cargo tank, but do not empty any other package while it is on the vehicle.

Cargo Heater Rules. There are special cargo heater rules for loading:

EXPLOSIVES **FLAMMABLE LIQUID** **FLAMMABLE GAS**

The rules usually forbid use of cargo heaters, including automatic cargo heater / air conditioner units. Unless you have read all the related rules, don´t load the above products in a cargo space that has a heater.

Use closed cargo space. You cannot have overhang or tailgate loads of:

EXPLOSIVES **FLAMMABLE SOLIDS** **OXIDIZING MATERIALS**

You must load these hazards into a closed cargo space unless all packages are:

-fire and water resistant, or

-covered with a fire and water resistant tarp.

Precautions for Specific Hazards

Explosives. Before loading or unloading any explosive, turn your engine off. Then check the cargo space.

-You must disable cargo heaters. Disconnect heater power sources and drain heater fuel tanks.

-There must be no sharp points that might damage cargo. Look for bolts, screws, nails, broken side panels, and broken floor boards.

-Use a floor lining with Class A or B explosives. The floors must be tight and the liner must not contain steel or iron.

-Check with State Police for other rules.

Use extra care to protect explosives. Never use hooks or other metal tools. Never drop, throw, or roll the shipment. Protect explosive packages from other cargo that might cause damage.

Do not transfer a Class A or B explosive from one vehicle to another on a public roadway except in emergency. If safety requires an emergency transfer, set out red warning reflectors, flags, or electric lanterns. You must warn other highway users.

Never transport damaged packages of explosives. Do not take a package that shows any dampness or oily stain.

Do not transport EXPLOSIVES A in triples. Do not transport EXPLOSIVES A in vehicle combinations if:

- there is a placarded cargo tank in the combination, or
- the other vehicle in the combination contains:

-initiating explosives
-radioactive materials labeled "Yellow 111,"
-class A or B poisons
-hazardous materials in a portable tank, Spec 106A or 110A

Corrosive Liquids. if loading by hand, load breakable containers of corrosive liquid one by one. Keep them right side up. Do not drop or roll the containers. Load them right side up. Do not drop or roll the containers. Load them onto an even floor surface. Only stack carboys if the lower tiers can bear the weight of the upper tiers safely.

Do not load nitric acid above any other product, or stack more than two high.

Load charged storage batteries so their liquid won´t spill. Keep them right side up. Make sure other cargo won´t fall against or short circuit them.

Never load corrosive liquids next to or above:
-EXPLOSIVES A
-EXPLOSIVES B
-FLAMMABLE SOLID
-OXIDIZING MATERIAL

Compressed Gases, Including Cryogenic Liquids. If your vehicle doesn´t have racks to hold cylinders, the cargo space floor must be flat. The cylinders must be:
-held upright or brace laying down flat, or
-in racks attached to the vehicle, or
-in boxes that will keep them from turning over.

Poisons. Never transport Poison A or irritating materials in containers with interconnections. Never load a package labeled POISON, POISON GAS, or IRRITANT, in the driver´s cab or sleeper or with food material for human or animal consumption.

Radioactive Materials. Some packages or radioactive materials bear a number called the "transport index." The shipper labels these packages Radioactive 11 or Radioactive 111, and prints the package´s transport index on the label. Radiation surrounds each package, passing through all nearby packages. To deal with this problem, the number of packages you can load together is controlled. Their closeness to people, animals, and unexposed film is also controlled. The transport index tells the degree of control needed during transportation. The total transport index of all packages in a single vehicle must not exceed 50.

Appendix A has rules for each transport index. It shows how long and how close you can load radioactive products to people, animals or film. For example, you can´t leave a package with a transport index of 1.1 within 2 feet of people or cargo space walls.

Mixed loads. The rules require some products to be loaded separately. Do not load them together in the same cargo space. Figure 7-6 lists some examples. **The regulations (the Segregation and Separation Chart) name other materials you must keep apart.**

DO NOT LOAD...	IN THE SAME VEHICLE WITH...
POISON labeled material	animal or food unless the poison package is overpackaged in an approved way. Foodstuff is anything you swallow. However,mouthwash, toothpaste,and skin creams are not foodstuff.
Poison A	Oxidizers, Flammables, Corrosives, Organic Peroxides.
Charged or stored batteries	Class A Explosives
Detonating primers	any other explosives unless in authorized containers or packagings.
Cyanides or cyanide mixtures	acids, corrosive materials, or other acidic materials which could release hydrocyanic acid from cyanides. Cyanides are materials with the letters CYAN as part of their shipping name. For example: Acetone **Cyano**hydrin Silver **Cyan**ide Trichloroiso**cyan**uric acid,dry
Nitric acid	Other corrosive liquids in carboys, unless separated from them in an approved way.

Bulk Tank Marking, Loading & Unloading

The glossary gives the special meaning of the word bulk. **Cargo tanks** are bulk containers permanently attached to a vehicle. Cargo tanks remain on the vehicle when you load and unload them. **Portable tanks** are bulk containers which are not permanently attached to a vehicle. They are loaded or unloaded with the product while off the vehicle. Portable tanks are then put on a vehicle for transportation. There are many types of cargo tanks in use. The most common are MC306 for liquids and MC331 for gases.

Tank Markings

You must display the ID number of the contents of portable tanks and cargo tanks. Product ID numbers are in column 3a of Hazardous Materials Table. The rules require black 4 inch numbers on orange panels, DOT placards, or a white, diamond shaped background if no placards are required. Specification cargo tanks must show retest date markings.

Portable tanks must also show the lessee or owner's name. They must also show the shipping name and ID number of the contents on two opposing sides. The letters must be at least 2 inches tall. The ID numbers must appear on each side and each end of tanks that hold 1000 gallons or more. The ID numbers must still show when the portable tank is on the vehicle. If they don't, you must display the ID number on both sides and ends of the vehicle.

Tank Loading

The person in charge of loading and unloading a cargo tank must be sure someone is always watching. The person watching loading or unloading must:

-have a clear view of the cargo tank,
-be within 25 feet of the tank,
-be aware of the hazards,
-know the procedures to follow in an emergency, and
-be authorized to move the cargo tank and able to do so.

Close all manholes and valves before moving a tank of hazardous materials. It does not matter how small the amount in the tank or how short the distance. Manholes and valves must not leak.

Flammable Liquids

Turn off your engine before loading or unloading any flammable liquid. Only run the engine if needed to operate a pump. Ground a cargo tank correctly before filling it through an open filling hole. Ground the tank beforeopening the filling hole, and maintain the ground unit after closing the filling hole.

Compressed gas

Keep liquid discharge valves on a compressed gas tank closed except when loading and unloading. Unless your engine runs a pump for product transfer, turn it off when loading or unloading. If you use the engine, turn it off after product transfer, before unhooking the hose. Unhook all loading / unloading connections before coupling, uncoupling, or moving a chlorine cargo tank. Always chock trailers and semi-trailers to prevent when uncoupled from the power unit.

Hazardous Materials: Driving & Parking Rules

Parking with Explosives A

Never park with EXPLOSIVES A or EXPLOSIVES B within 5 feet of the traveled part of the road. Unless your work requires it, do not park within 300 feet of:

-a bridge, tunnel, or building,
-a place where people are gathered, or
-an open fire.

If you must park to do your job, do so only briefly.

Don't park on private property unless the owner is aware of the danger. Someone must always watch the parked vehicle. You may let someone else watch it for you only if your vehicle is:
-on the shipper's property, or
-on the carrier's property, or
-on the consignee's property.

You can leave your vehicle unattended in a safe haven. A safe haven is a government approved place for parking unattended vehicles loaded with explosives.

Parking When Placarded but Not Transporting Explosives A or B

You may park a placarded vehicle (not carrying explosives) within 5 feet of the traveled part of the road only if your work requires it. Do so only briefly. Someone must always watch the vehicle when parked on a public roadway or shoulder. Do not uncouple a trailer and leave it with hazardous material on public street. Do not park within 300 feet of an open fire.

Watching Parked Vehicles

The person watching a placarded vehicle must:
-be in the vehicle, awake, and not in the sleeper berth, or within 100 feet of the vehicle and have it within clear view,
-be aware of the hazards,
-know what to do in emergencies, and
-be able to move the vehicle if needed.

No Flares!

You might break down and have to use stopped vehicle signals. Use reflective triangles or red electric lights. Never use burning signals, such as flares or fusees, around a:
-tank used for flammable liquid or flammable gas(whether loaded or empty,
-vehicle loaded with:

EXPLOSIVES A	FLAMMABLE LIQUID
EXPLOSIVES B	FLAMMABLE GAS

Route Restrictions

Some states and counties require permits to transport hazardous material or waste. They may limit the routes you can use. Local rules about routes and permits change often. It is your job as driver to find out if you need permits or must use special routes. Make sure you have all needed papers before starting.

If you work for a carrier, ask your dispatcher about route limits or permits. If you are an independent and are planning a new route, check with state agencies where you plan to travel. Some localities prohibit transportation of hazardous materials through tunnels, over bridges, or other roadways. Check before you start.

Whenever placarded, avoid heavily populated areas, crowds, tunnels, narrow streets, and alleys. Take other routes, even if inconvenient, unless there is no other way. Never drive a placarded vehicle near open fires unless you can safely pass without stopping.

If transporting Class A or Class B Explosives, you must have a written route plan and follow that plan. Carriers prepare the route plan in advance, and give the driver a copy. You may plan the route yourself if you pick up the explosives at a location other than your employer's terminal. Write out the plan in advance. Keep a copy of it with you while transporting the explosives. Deliver shipments of explosives only to authorized persons or leave them in locked rooms designed for explosives storage.

A carrier must choose the safest route to transport placarded radioactive material. After choosing the route, the carrier must tell the driver about the radioactive materials, and show the route to be taken.

No Smoking

Do not smoke within 25 feet of a placarded tank used for flammable liquids or gases. Also do not smoke or carry a lighted cigarette, cigar, or pipe within 25 feet of any vehicle which contains:

EXPLOSIVES OXIDIZERS FLAMMABLES

Refuel With Engine Off

Turn off you engine before fueling a placarded vehicle. Someone must always be at the nozzle, controlling fuel flow.

10 B:C Fire Extinguisher

The power unit of placarded vehicles must have a fire extinguisher with a UL rating of 10 B:C or more.

Check Tires Every 2 hours / 100 miles

Make sure your tires are properly inflated. Check placarded vehicles with dual tires at the start of each trip and when you park. You must stop and check the tires every 2 hours or 100 miles, whichever is less. The only acceptable way to check tire pressure is to use a tire pressure gauge.

Do not drive with a tire that is leaking or flat except to the nearest safe place to fix it. Remove any overheated tire. Place it a safe distance from your vehicle. Don't drive until you correct the cause of the overheating. Remember to follow the rules about parking and watching placarded vehicles. They apply even when checking, repairing, or replacing tires.

Where to Keep Shipping Papers

Do not take a hazardous material shipment without a properly prepared shipping paper. A shipping paper for hazardous material must always be easily recognized. Other people must be able to find it quickly after an accident.

-Clearly distinguish hazardous material shipping papers from others by tabbing them or keeping them on top of the stack of papers.

-When you are behind the wheel, keep shipping papers within your reach(with your safety belt on), or in a pouch on the driver´s door. They must be easily seen by someone entering the cab.

-When not behind the wheel, leave shipping papers in the driver´s floor pouch or on the he driver´s seat.

Papers for Class A or B Explosives

A carrier must give each driver transporting Class A or Class B explosives a copy of FMCSR par 397. The carrier must also give written instructions on what to do if delayed or in an accident. The written instructions must include:

-the names and telephone numbers of people to contact (including carrier agents or shippers),

-the nature of the explosives transported,

-the precautions to take in emergencies such as fires, accidents, or leaks.

You must be familiar with, and have in your possession while driving, the:

-shipping papers,

-written emergency instructions,

-written route plan,

-a copy of FMSCR part 397.

Equipment for Chlorine

A driver transporting chlorine in cargo tanks must have an approved gas mask in the vehicle. The driver must also have an emergency kit for controlling leaks in dome cover plate fittings on the cargo tank.

Stop before crossing a railroad if your vehicle:

-is placarded, or

-carries any amount of chlorine, or

-has cargo tanks, whether loaded or empty, used for hazardous materials.

Stop Before Railroad Crossings

You must stop 15 to 50 feet before the nearest rail. Proceed only when your are sure no train is coming. Don´t shift gears while crossing the tracks.

HAZARDOUS MATERIALS - EMERGENCIES

No Smoking
Warn Others
Keep People Away
Avoid Contact or Inhaling

Emergency Response Guidebook

The Department of Transportation has a guide book for fire fighters, police, and industry personnel. The guidebook tells them what to do first to protect themselves and the public from hazardous materials. The guide is indexed by shipping name and hazardous material ID number. Emergency personnel look for these things on the shipping paper. That is why it is vital that the shipping name, ID number, label, and placards are correct.

Accidents / Incidents

As a professional driver, your job at the scene of an accident is to:

-Keep people away from the area.
-Limit the spread of material, **only if you can safely do so.**
-Communicate the danger to emergency response personnel.

Follow this checklist.

1. Check to see that your driving partner is OK.
2. Keep shipping papers with you.
3. Keep people far away & upwind.
4. Warn others of the danger.
5. Send for help.
6. Follow your employer's instructions.

Fires

You might have to control minor truck fires on the road. **However, unless you have the training and equipment to do so safely, don't fight hazardous material fires.** Dealing with hazardous material fires requires special training and protective gear.

When you discover a fire, send someone for help. You may use the fire extinguisher to keep minor truck fires from spreading to cargo before fire fighters arrive. Feel trailer doors to see if they are hot before opening them. If hot, you may have a cargo fire and should not open the doors. Opening doors lets air in and may make the fire flare up. Without air, many fires only smolder until firemen arrive, doing less damage. If your cargo is already on fire, it is not safe to fight the fire. Keep the shipping papers with you to give to emergency personnel as soon as they arrive. **Warn other people of the danger and keep them away.**

Leaks

If you discover a cargo leak, identify the material by using shipping papers, labels, or package location. **Do not touch any leaking material.** Many peopled, under the stress of handling an accident or leak, forget and injure themselves this way. Do not try to identify material or find the source of the leak by smell. Many toxic gases destroy one's sense of smell. They can injure or kill you even if they don't smell. Do not eat, drink, or smoke around a leak or spill.

If hazardous material is spilling from your vehicle, do not move it any more than safety requires. You may move off the road and away from places where people gather, if doing so serves safety. Only move your vehicle if you can do so without danger to yourself or others.

Never continue driving with hazardous material leaking from your vehicle to find a phone booth, truck stop, help, or similar reason. Remember that the carrier pays for the cleanup of contaminated parking lots, roadways, and drainage ditches. The costs are enormous, so don't leave a lengthy trail of contamination. If hazardous material is spilling from you vehicle:

- Park it.
- Secure the area.
- Stay there.
- Send someone else for help.

When sending someone for help, give that person:

- a description of the emergency,
- your exact location and direction of travel,
- your name, the carrier's name, the name of the community or city where your terminal is located,
- the shipping name, hazard class, and ID number of the material, if you know them.

This is a lot for someone to remember. It is a good idea to write it all down for the person you send for help. The emergency response team must know these things to find you and to handle the emergency. They may have to travel miles to get to you. This information will help them to bring the right equipment the first time, without having to go back for it.

Never move your vehicle if doing so will cause contamination or damage the vehicle. Keep downwind and away from roadside rests, truckstops, cafes, businesses. Never try to repack leaking containers. Unless you have the training and equipment to repair leaks safely, don't try it. Call your dispatcher or supervisor for instructions, and, if needed, emergency personnel.

Response to Specific Hazards

Explosives. If your vehicle breaks down or is in an accident while carrying explosives, warn others of the danger. Keep bystanders away. Do not allow smoking or open fire near the vehicle.

Remove all explosives before pulling apart vehicles involved in a collision. Place the explosives at least 200 feet from the vehicles and occupied buildings. If there is a fire, warn everyone of the danger of explosion. Stay a safe distance away.

Flammable liquids. If you are transporting a flammable liquid and have an accident or your vehicle breaks down, prevent bystanders from gathering. Warn people of the danger. Keep them from smoking.

Never transport a leaking cargo tank farther than needed to reach a safe place. If safe to do so, get off the roadway. Don't transfer flammable liquid from one vehicle to another on a public roadway except in emergency.

Flammable Solids and Oxidizing Materials. If a flammable solid or oxidizing material spills, warn others of the fire hazard. Do not open smoldering packages of flammable solids. Remove them from the vehicle if you can safely do so. Gather and remove any broken packages if it is safe to do so. Also remove unbroken packages if it will decrease the fire hazard.

Corrosive Materials. If corrosives spill or leak in transit, be careful to avoid further damage or injury when handling the containers. Parts of the vehicle exposed to a corrosive liquid must be thoroughly washed in water. Wash out the interior as soon after unloading as possible, before reloading the vehicle.

If further transportation of a leaking tank would be unsafe, get off the road. If safe to do so, try to contain any liquid leaking from the vehicle. Keep spectators away from the liquid and its fumes. Do everything possible to prevent injury to other highway users.

Compressed Gases. If compressed gas is leaking from your vehicle, warn others of the danger. Only permit those involved in removing the hazard or wreckage to get close. You must notify the shipper of the compressed gas of any accident.

Unless you are fueling machinery used in road construction or maintenance, do no transfer a flammable compressed gas from one tank to another on a public roadway.

Poisons. You must protect yourself, other people, and property from harm. Remember that many products classed as poison are also flammable. If you think a leaking poison liquid or gas might be flammable, take the added precautions needed for flammable liquids or gases. Do not allow smoking, open flame, or welding. Warn others of the hazards of fire, of inhaling vapors, or coming in contact with the poison.

A vehicle involved in a leak of Poison A or Poison B must be checked for stray poison before being used again.

Radioactive Materials. If a leak or broken package involves radioactive material, tell your dispatcher or supervisor as soon as possible. If there is a spill, or if an internal container might be damaged, do not touch or inhale the material. Do not use the vehicle until it is cleaned and checked with a survey meter.

Required Notifications. The National Response Center helps coordinate emergency response to chemical hazards. They are a resource to the local police and fire fighters. The person in charge of a vehicle involved in an accident may have to phone the National Response Center. This call will be in addition to any made to police and fire fighters. You or your employer must phone when **any** of the following occur **as a direct result of a hazardous materials incident.**

-a person is killed,
-a person receives injuries requiring hospitalization,
-estimated carrier or other property damage exceeds $50,000.

NATIONAL RESPONSE CENTER
(800) 424-8802

The person making the immediate telephone report should be ready to give:

-Their name;
-Name and address of the carrier they work for;
-Phone number where they can be reached;
-Date, time, and location of incident;
-The extent of injuries, if any;
-Classification, name, and quantity of hazardous materials involved, if such information is available;
-Type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene.
-If a reportable quantity of hazardous substance was involved, the caller should give:
    -the name of the shipper,
    -the quantity of the hazardous substance discharged.

Be prepared to give your employer the required information. Carriers must make detailed written reports within 15 days.

CHEMTREC
(800) 424-9300

The Chemical Transportation Emergency Center (CHEMTREC) in Washington also has a 24 hr. toll free line. CHEMTREC was created to provide emergency personnel with technical information about the physical properties of hazardous products. The National Response Center and CHEMTREC are in close communication. If you call either one, they will tell the other about the problem when appropriate.

Hazardous Materials

Rules for all Commercial Drivers

-All drivers should know something about hazardous materials. You must be able to recognize hazardous cargo, and you must know whether or not you can haul it without having a Hazardous Materials endorsement to your CDL license.

What are Hazardous Materials

-The Federal Hazardous Materials Table names materials that are hazardous. They pose a risk to health, safety, and property during transportation. You must follow the many rules about transporting them. The intent of the rules is to:

a. Contain the product,
b. Communicate the risk,
c. Ensure safe drivers and equipment.

Why are there rules?

-To contain the product: Many hazardous products can injure or kill on contact. To protect drivers and others from contact, the rules tell shippers how to package safely. Similar rules tell drivers how to load, transport, and unload bulk tanks. These are containment rules.

-To communicate the risk: The shipper uses a shipping paper and package labels to warn dockworkers and drivers of the risk. Shipping orders, bills of lading, and manifests are all examples of shipping papers.

There are 22 different hazards classes. A material´s hazard class reflects the risks associated with it. Here are the 22 hazard classes.

Blasting Agent
Combustible Liquid
Corrosive
Etiologic Agents
Explosive A
Explosive B
Explosive C
Flammable Gas
Flammable Liquid
Flammable Solid
Irritating Material
Nonflammable Gas
Organic Peroxide
ORM-A
ORM-B
ORM-C
ORM-D
ORM-E
Oxidizer
Poison A
Poison B
Radioactive Material

Shippers write the name of the hazard class of hazardous products in the item description on the shipping paper. Similar words should show on four inch diamond shaped labels on the containers of hazardous materials. If the diamond label won´t fit on the container, shippers put the label on a tag. For example, compressed gas cylinders that will not hold a label will have tags or decals. Labels look like the examples shown in Figure 2-15.

After an accident or hazardous material leak, the driver may be unable to speak when help arrives. Fire fighters and police must know the hazards involved in order to prevent more damage or injury. The driver's life, and the lives of others, may depend on quickly finding the shipping papers for hazardous cargo. For that reason, you must tab shipping papers related to hazardous materials, or keep them on top of other shipping papers. You must also keep shipping papers:

a. In a pouch on the driver's door, or
b. In clear view within reach, or
c. On the driver's seat.

Drivers must use placards to warn others of their hazardous cargo. Placards are signs placed on the outside of a vehicle to show the hazard class(es) of products on board. There are 19 different DOT placards. A chart showing example placards appears at the end of Section 7. Each is turned upright on a point, like a diamond shape. The person who does the loading must place the placards on the front, rear, and both sides of the vehicle.

Not all vehicles carrying hazardous materials need to have placards. The rules about placards are give in Section 7 of this driver's manual. You can drive a vehicle that carries hazardous materials if it does not require placards. If it requires placards, you must not drive it unless your driver's license has the hazardous materials endorsement.

To ensure safe drivers and equipment: The rules require all drivers of placarded vehicles to learn how to safely load and transport hazardous products. They must have a commercial driver's license with the hazardous materials endorsement.

To get the required endorsement you must pass a written test on material found in Section 7 of this manual. You also will need a tank endorsement if you transport hazardous products in a cargo tank on a truck larger that 26,000 pounds, gross vehicle weight rating.

Drivers who need the hazardous materials endorsement you must learn the placard rules. If you do not know if your vehicle needs placards ask your employer. **NEVER DRIVE A VEHICLE NEEDING PLACARDS UNLESS YOU HAVE THE HAZARDOUS MATERIALS ENDORSEMENT.** To do so is a crime. When stopped, you will be cited and you will not be allowed to drive your truck further. It will cost you time and money. A failure to placard when needed will risk your life and others if you have an accident. Emergency help will not know of your hazardous cargo.

Hazardous materials drivers must also know which products they can load together, and which they can not. These rules are also in Section 7. Before loading a truck with more than one type of product, you must know if it is safe to load them together. If you do not know, ask your employer.

SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLES

SUBJECT: TEST TAKING SKILLS

TIME ALLOTTED:

PAGE: 3-2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To acquire basic skills in test taking.	1.a.Key Words in TT b.How to be a Master Test Taker c.Select the Best Answers d.Procedure for End of the Test	1.Lectures a.instructors manual a.b.c. overhead transparencies 1.Handouts	1.Proficiency Test

SESSION 2

USE OF KEY WORDS IN TEST TAKING

Objective:

To understand the use of key words in test taking.

Techniques/Procedures:

-Overhead Transparency
-Handout 150, Sample Test

Content:

-Lecture: There are key words to look for when answering test questions. Who means to look for a person. What means to look for a description of a thing. When means to look for the time or sequence in which something happened. Where means to look for a place. Why means to look for the reason something happened.
-Give our sample test on .3.3-.text.

ANSWERING QUESTIONS THAT ASK **WHO**, **WHAT**, **WHEN**, **WHERE**, and **WHY**

There are key words to look for when answering test questions. Usually, **who** means to look for a person. **What** means to look for a description or a thing. **When** means to look for the time or sequence in which something happened. **Where** means to look for a place. **Why** means to look for the reason something happened.

DIRECTIONS: Circle the letter which matches the answer you choose.

1. The key word **where** asks for a ________.

time	place	thing	reason
A	B	C	D

2. Usually, the key word **who** asks for a ________.

reason	time	place	person
A	B	C	D

3. The key word **when** asks for a ________.

time	person	thing	place
A	B	C	D

4. The key word **why** asks for a ________.

place	thing	person	reason
A	B	C	D

5. The key word **what** asks for a ________.

time	place	thing	reason
A	B	C	D

HOW TO BE A MASTER TEST TAKER

- APPROACH THE TEST CONFIDENTLY. BE CALM.
- ARRIVE ON TIME.
- GET COMFORTABLE AND RELAX.
- HAVE ALL MATERIALS YOU NEED.
- LISTEN CAREFULLY TO ALL DIRECTIONS.
- READ ALL DIRECTIONS. READ THEM TWICE IF NECESSARY.
- LOOK OVER THE COMPLETE PAGE BEFORE ANSWERING ANY QUESTIONS.
- CAREFULLY READ EACH QUESTION. MAKE SURE YOU UNDERSTAND EACH ONE BEFORE YOU ANSWER. REREAD IF NECESSARY.
- THINK! AVOID HURRIED ANSWERS.
- GET ALL THE HELP YOU CAN FROM "CUE" WORDS.
- STAY CALM AND CONFIDENT THROUGHOUT THE TEST. DON'T LET ANYTHING THROW YOU.
- CHECK AND PROOFREAD YOUR ANSWERS. BE A BITTER-ENDER. CONTINUE WORKING UNTIL IT IS TIME TO GO.

SESSION 11

SELECTING THE BEST ANSWER

Objective:

To show how to pick the best answer on multiple choice tests.

Techniques/Procedures:

-Handout - 167
-Overhead Transparency

Content:

-Lecture: you can see right away that some answers are wrong. Don't take time trying to use the wrong answers. Look at the answers that might be right and pick the answer from those. Pick the answer from the ones that are possible.

ATTEND Kinestic Style

SELECTING THE BEST ANSWER

DIRECTIONS: First choose the best answer. After you identify the answer, circle the letter next to it.

1. **Best** means
   A. as good as any
   B. good looking
   [✓ C.] better than any others
   D. sitting straight

2. **Choose** means to
   [✓ A.] decide which one
   B. look at the menu
   C. put cards in piles
   D. remember a number

3. **Correct** means
   A. full of errors
   B. your report card mark
   [✓ C.] free from mistakes
   D. easiest to read

4. **Identify** means to
   [✓ A.] show which one
   B. wear a badge
   C. write your name
   D. spy

5. **Incorrect** means
   A. a line that is not straight
   B. identify the subject
   C. greater than
   [✓ D.] not right

6. **False** means
   [✓ A.] not true
   B. a fiction story
   C. straight line
   D. being unhappy

7. **Fewer** means
   A. more than
   B. a little child
   C. about the same
   [✓ D.] less in number

8. **Greater** means
   A. a circle
   [✓ B.] larger than
   C. to grind
   D. fewer

9. **Locate** means to
   A. write a report
   B. put in order
   C. see a movie
   [✓ D.] find something

10. **Pick** means to
   A. dig
   [✓ B.] choose
   C. shovel
   D. make a circle

SESSION III

UNDERSTANDING THE PROCEDURE AT THE END OF TAKING A TEST

Objective:

To understand the procedure at the end of taking a test.

Techniques/Procedures:

-Overhead Transparency

Content:

-Lecture: The single reason for the greatest number of incorrect answers on standardized tests is the failure to check answers at the end of the test. (Question of the class: "What kinds of things does a person look for when checking answers at the end of a test?" Answer 1. Wrong answers. (Caution: never change an answer unless you're sure it's wrong.) 2. Unanswered questions 3. Incomplete answer sheet. 4. Incorrect answer sheet) Then discuss handout and overhead.

SESSION I

CORRECTLY FOLLOWING THE DIRECTIONS ON THE CDL

Objective:

Explain the directions of the CDL.

Techniques/Procedures:

-Overhead (Directions from CDL test.)

Content:

-Lecture: Inform the students on the directions.

INSTRUCTIONS

Do not start the test until you have read all instructions.

This is a test of the knowledge required.

Read each question. Make sure that you read all the possible answers. Decide which answer is best. There is only one best answer for each question. Then mark that answer on your answer sheet by blackening in the circle with the letter for that answer. You are not to make any marks on the test booklet.

Look at the EXAMPLE box at the top of the answer sheet. It shows how to mark your answers. You must blacken in completely the circle for the answer that you wish to mark. You may change an answer if you wish, but be sure that you completely erase the old answer.

Remember, do not mark more than one answer. If you mark more than one answer to a questions, it will be graded as a wrong answer.

If you do not know the answer to a question, you should guess. You should answer all questions on the test.

This test is not timed. You will have as long to work on it as you wish.

You may begin whenever you are ready. if you have any questions either now or as you work through the test, raise your hand.

SESSION: HAZARDOUS MATERIAL (HAZMAT), DOUBLES/TRIPLES, AND TANK VEHICLES

SUBJECT: PROFICIENCY TEST (Session II)

TIME ALLOTTED:

PAGE: 4-2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1.To test the knowledge acquired in this session.	80 Questions	Written/Separate Answer Sheet	80% Passage (10 Wrong)

96

PROFICIENCY TEST
HAZARDOUS MATERIAL, DOUBLES/TRIPLES, AND TANK VEHICLES

1. When uncoupling the rear trailer in a triple combination which is done first?

   A. Line trailer up
   B. Chock wheels
   C. Set trolling brake
   D. None, it is illegal in N.H. to run triples

2. What is more important in a double trailer situation?

   A. The lighter trailer is first
   B. The heaviest trailer is first
   C. It doesn´t matter
   D. Off tracking is different

3. In securing a double trailer situation which trailer is hooked up first?

   A. The trailer that is right behind the tractor
   B. The second trailer
   C. It doesn´t matter
   D. None of the above

4. When positioning the converter dolly without spring brakes how do you release the dolly brakes?

   A. Pedal valve
   B. Limited valve
   C. Treadle valve
   D. Petcock; air tank

5. What is the first thing you do before loading or unloading any explosives?

   A. Chock wheels
   B. Pull over
   C. Turn your engine off
   D. None of the above

6. Cargo heaters are not allowed while hauling which of the following materials?

   A. Water, oil, gas
   B. Explosives, flammable liquid, flammable gas
   C. A and B
   D. None of the above

7. Floor lining must be used when hauling what?

   A. Oxidizers
   B. Flammables
   C. Explosives
   D. Cars

8. When handling explosives never use:

   A. Hooks or other metal tools
   B. Wooden pallets
   C. Push Carts
   D. Straps and Webbing

9. What is the size of a HAZMAT Placard?

   A. 10"
   B. 9 3/4"
   C. 11"
   D. 10 3/4"

10. Placards must be at least how far away from other markings?

   A. 2"
   B. 4"
   C. 3"
   D. 2 3/4"

11. There are how many hazard classes?

   A. 22
   B. 20
   C. 40
   D. 10

12. You may park a placarded vehicle (not carrying explosives) no closer than:

   A. 10 ft. of a traveled part
   B. 15 ft. of a traveled part
   C. 20 ft. of a traveled part
   D. 5 ft. of a traveled part

13. How many feet from an open fire can you park with a placarded vehicle?

   A. 300 ft.
   B. 250 ft.
   C. 100 ft.
   D. 500 ft.

14. The person watching a placard vehicle must be within?

A. 200 ft. of the vehicle
B. 300 ft. of the vehicle
C. 400 ft. of the vehicle
D. 100 ft. of the vehicle

15. The person in charge of watching the loading and unloading of a cargo tank must be within:

A. 25 ft.
B. 30 ft.
C. 15 ft.
D. 5 ft.

16. Never park with explosives A or B within ________________?

A. 10 ft. of a traveled part of the road
B. 5 ft. of a traveled part of the road
C. 15 ft. of a traveled part of the road
D. 25 ft. of a traveled part of the road

17. In moving a hazardous tank vehicle you must do what first?

A. Shift properly
B. Close all manholes and valves
C. Check papers
D. Check tires

18. In a portable tank unit the ID numbers must be?

A. 4"
B. 1"
C. 2"
D. 5"

19. When approaching a railroad crossing you must stop before the nearest rail:

A. 15 - 20 ft. before tracks
B. 10 - 20 ft. before tracks
C. 15 - 50 ft. before tracks
D. 10 - 40 ft. before tracks

20. You should check tires while driving HAZMAT every:

A. 2 hrs., 160 miles
B. 4 hrs., 100 miles
C. 4 hrs., 200 miles
D. 4 hrs., 300 miles

21. The rating on your fire extinguisher must be at least what for HAZMAT:

A. 5 B:C or more
B. 15 B:C or more
C. 10 B:C or more
D. 20 B:C or more

22. In transporting class A or B explosives you must have:

A. A written route plan
B. Shipping papers
C. Placard that show the HAZMAT
D. All of the above

23. While driving HAZMAT, you find an overheated tire you must:

A. Stop
B. Remove it
C. Get to your destination
D. You shouldn't check tires

24. While driving HAZMAT you smell smoke, you discover a fire, when you leave your vehicle you should always:

A. Run like hell
B. Open all doors
C. Take shipping papers with you
D. Get to your destination quickly

25. Do not smoke within how many feet of a placard vehicle?

A. 20 ft.
B. 15 ft.
C. 10 ft.
D. 25 ft.

26. When must you carry an approved gas mask?

A. While driving with flammable gas
B. While driving with jet fuel
C. While driving with fertilizer
D. While driving with chlorine

27. What is the least poundage you must have for an RQ requirement?

A. 20 lbs
B. 50 lbs
C. 10 lbs
D. 500 lbs

28. Your hauling Class C Explosive, or Flammable Gas or an item from Placard Table 2, what poundage must you placard at?

A. 500 lbs
B. 250 lbs
C. 750 lbs
D. 1000 lbs

29. You have stopped for coffee, you have a clear view of you placarded vehicle, how close must you stay to that vehicle?

A. 150 feet
B. 50 feet
C. 5 feet
D. 100 feet

30. Where must your shipping papers be kept?

A. Under the rest of your papers
B. In pouch on the driver's door
C. With packing slip in trailer
D. You don't need them

31. While loading bottled gas you must have?

A. A flat floor
B. Braces laid flat
C. Floor racks
D. All of the above

32. While hauling mixed loads which is placarded?

A. The heaviest weight
B. Don't placard at all
C. The lowest weight
D. Split placards

33. With corrosive liquids, how high can you load nitric acid?

A. 3 high
B. Stack up to ceiling
C. 2 high
D. Not at all

34. Never load corrosive liquids next to or above:

A. Explosives A & B
B. Flammable Solid
C. Oxizing liquid
D. All of the above

5. Never load a package labeled poison, poison gas, or irritant in:

A. Driving cab area
B. Water
C. Closed non vented area
D. In cubby under sleeper

36. While loading dense liquids, you must watch for:

A. Weight of vehicle
B. Legal weight of limits
C. Expansion of liquid
D. All of the above

37. Never load a tank vehicle full because of:

A. Outage
B. Surge
C. Roll over
D. Slow in going up hills

38. Smooth bare tanks are dangerous because of:

A. No baffles
B. Slow going up hill
C. Surge
D. No bulkheads

39. While driving a tank vehicle around curves and off ramps you should:

A. Go the posted speed
B. Slow down below the posted speed
C. Accelerate to handle better
D. Hold on for life

40. How many gallons are required to be called a tank vehicle?

A. 500
B. 250
C. 1000
D. 1500

41. While stopping a tank vehicle, you feel this vehicle being pushed back and forth. This is called:

A. Rock and roll
B. Surge
C. Outage
D. Dry buck

42. What will control forward and rear surge?

A. Bulkheads
B. Don't drive liquids
C. Baffles
D. Smooth bore tank

43. Where does the heaviest trailer go in a double situation?

A. It doesn't matter
B. Last
C. First
D. None of the above

44. What is a pintle hook used for?

A. Locking cargo
B. To connect converter dollies
C. Loading cargo
D. Pushing snow

45. When checking air flow to all trailers (to include triples) how how do you check that is is flowing to the rear trailer?

A. Open dolly valves
B. Open first trailer valve
C. Open the shut off valve at rear of the rear trailer
D. None of the above

46. What is a converter dollie used for?

A. Wheels that a trailer rolls up on to
B. The units used to connect trailers together
C. Signal devises
D. Communication

47. Rearward amplification causes what effect?

A. Roll war
B. Straight line
C. Crack-the-whip
D. 5 axle shutter

48. What is the normal following distances under 40 mph?

A. Two seconds for each 12 feet
B. One second for each 10 feet
C. 3/4 seconds for each 10 feet
D. None of the above

9. In a double situation which trailer will start to skid first?

A. Rear
B. Closer to the tractor
C. Evenly
D. Rare - they will both track

50. How do you stop a trailer skid?

A. Hard pressure on brake
B. Stab braking
C. Stop using the brake
D. Squeeze braking

51. When involved in a HAZMAT accident while driving explosives, how far do you remove material before you pull units apart?

A. 150 ft.
B. 100 ft.
C. 250 ft.
D. 200 ft.

52. What is the legal limit for doubles in N.H. per trailer?

A. 40
B. 28
C. 48
D. 27

53. While handling a double, which roads in N.H. are you allowed on?

A. All roads
B. Interstates and large roads
C. Interstates only
D. None of the above

54. What should your air pressure be before starting with doubles/triples?

A. 80 - 85
B. 70 - 80
C. 100 - 125
D. 90 - 100

55. After uncoupling doubles/triples you should make sure your what are closed?

A. Air is bled off
B. Shut off valve (gate) closed
C. Converter dollies are cleared
D. Trailers are lined up

56. Hauling liquids in tank vehicles requires special care for two reasons. One reason is:
   - A. Liquid movement
   - B. Extreme weight
   - C. Uneven expansion
   - D. Special handling

57. A tanker has lost its brakes. When should the driver use a truck escape ramp?
   - A. Only if the tank has baffles
   - B. Always
   - C. Never
   - D. None of the above

58. You are driving a tank truck and the front wheels begin to skid. Which of these is most likely to occur?
   - A. You will continue in a straight line and keep moving
   - B. Liquid surge will pull the tank from the truck
   - C. The truck will roll over
   - D. You will spin around after awhile

59. An emergency forces you to stop your tanker quickly or crash. You should:
   - A. Lock the brakes with the pedal and hold it there
   - B. Use only the emergency brakes
   - C. Use controlled or stab braking
   - D. Turn quickly to avoid it

60. Which of these statements about emergency steering and tankers is true?
   - A. A tanker is easier to countersteer than most vehicles
   - B. When making a quick steering movement, do not apply the brakes
   - C. You should wrap your thumbs around the steering wheel before starting a quick steering movement

61. Outage means
   - A. Liquid weight
   - B. How fast the tanks drain
   - C. Allowance for expansion of liquid
   - D. The weight to deliver

62. Liquid-tight separations between compartments inside tanks are called:
   - A. Bulkheads
   - B. Baffles
   - C. Barriers
   - D. Racks

63. The amount of liquid to load into a tank depends on:
    A. The amount the liquid will expand in transit
    B. The legal weight limits
    C. Both of the above factors
    D. None

64. Separations, (between compartments inside tanks that have openings or holes in them) are called:
    A. Bulkheads
    B. Baffles
    C. Barriers
    D. Headers

65. Which of these statements about stopping distance and speed is true?
    A. You need about two times as much stopping distance at 40 mph as at 20 mph
    B. Wet roads can double stopping distance at any speed
    C. Both of the above are true
    D. None of the above is true

66. The length limit for any single motor vehicle, except for auxiliary parts, is:
    A. 40 feet
    B. 45 feet
    C. 50 feet
    D. 60 feet

67. Medical certificates must be renewed every:
    A. year
    B. two years
    C. four years
    D. three years

68. For an average driver, driving 55 mph on dry pavement, it will take about ____ to bring the vehicle to a stop:
    A. twice the length of the vehicle
    B. half the length of a football field
    C. the length of a football field
    D. The length of two football fields

69. You are driving a heavy vehicle and must exit a highway using an offramp that curves downhill. You should:
    A. Use the posted speed limit for the offramp
    B. Slow down to a safe speed before the turn
    C. Wait until you are in the turn before downshifting
    D. Use regular road speed limits

70. Whenever backing cannot be avoided always.
    A. check clearances before starting /
    B. back slowly
    C. use a spotter or helper
    D. all of the above

71. What does a retarder do?
    A. helps control skids
    B. tells the driver the oil pressure
    C. helps slow the vehicle reducing the need for using the brakes
    D. None of the above

72. Which of these statements about downshifting is true?
    A. When you downshift for a curve, you should do so before you enter the curve
    B. When you downshift for a hill, you should do so after you start down the hill
    C. Never down shift until you need to
    D. a and c

73. What should you do if your vehicle hydroplanes?
    A. Start stab braking
    B. Accelerate slightly
    C. Release the accelerator
    D. Stop

74. Which of these statements about backing a heavy vehicle is true?
    A. You should avoid backing whenever you can
    B. When you use a helper, he/she should use clear voice (spoken) signals
    C. It is safer to back toward the right side of the vehicle than to the driver's side
    D. Back on blind side

75. Which of these statements about double-clutching and shifting is true?
    A. It should not be done when the road is slippery
    B. You can use the sound of the engine to tell you when to shift
    C. You must use both clutch pedals
    D. Don't use a clutch

76. Which of these statements about speed management is true?
    A. Empty trucks always stop in a shorter distance than fully loaded ones
    B. As the speed of a vehicle doubles, its stopping distance also doubles
    C. Choose a driving speed that lets you stop in the space that you can see ahead
    D. Go slow as possible

77. When do posted speed limits apply? /
    A. At night
    B. When necessary to drive around a jaywalker
    C. When conditions safely allow
    D. When its raining

78. What is the proper brake application for descending long grades?
    A. Short, hard pumps
    B. Light, steady applications
    C. Alternating hard and light
    D. Use only when need to stop

79. When is a wet road slickest?
    A. Just as it begins to rain
    B. when the wind is also blowing
    C. When it has rained for an hour
    D. When there are leaves on the road

80. A convex mirror is not suitable for:
    A. Spotting cars beside you
    B. Judging distances
    C. Use in backing
    D. b & c

SESSION I II III IV
(Circle Session Number)

Answer Sheet

Name: HAZMAT-TANKS-DOUBLES/TRIPLES **Date:** MASTER ANS.

1. [✓ A] B C [✓ D] EITHER
2. A [✓ B] C D
3. A [✓ B] C D
4. A B C [✓ D]
5. A B [✓ C] D
6. A [✓ B] C D Ⓒ ALSO
7. A B [✓ C] D
8. [✓ A] B C D
9. A B C [✓ D]
10. A B [✓ C] D
11. [✓ A] B C D
12. A B C [✓ D]
13. [✓ A] B C D
14. A B C [✓ D]
15. [✓ A] B C D
16. A [✓ B] C D
17. A [✓ B] C D
18. A B [✓ C] D
19. A B [✓ C] D
20. [✓ A] B C D
21. A B [✓ C] D
22. A B C [✓ D]
23. A [✓ B] C D
24. A B [✓ C] D
25. A B C [✓ D]
26. A B C [✓ D]
27. A B [✓ C] D
28. A B C [✓ D]
29. A B C [✓ D]
30. A [✓ B] C D
31. A B C [✓ D]
32. A B C [✓ D]
33. A B C [✓ D] REF. 7-12 7-13
34. A B C [✓ D]
35. [✓ A] B C D
36. A B C [✓ D]
37. [✓ A] B C D
38. A B [✓ C] D
39. A [✓ B] C D
40. A B [✓ C] D
41. A [✓ B] C D
42. A B [✓ C] D
43. A B [✓ C] D
44. A [✓ B] C D
45. A B [✓ C] D
46. A [✓ B] C D
47. A B [✓ C] D
48. A [✓ B] C D
49. [✓ A] B C D
50. A B [✓ C] D
51. A B C [✓ D]
52. A [✓ B] C D
53. A B [✓ C] D
54. A B [✓ C] D
55. A [✓ B] C D
56. [✓ A] B C D
57. A [✓ B] C D
58. [✓ A] B C D
59. A B [✓ C] D
60. A [✓ B] C D
61. A B [✓ C] D
62. [✓ A] B C D
63. A B [✓ C] D
64. A [✓ B] C D
65. A [✓ B] C D
66. [✓ A] B C D
67. A [✓ B] C D
68. A B [✓ C] D
69. A [✓ B] C D
70. A B C [✓ D]
71. A B [✓ C] D
72. A B C [✓ D]
73. A B [✓ C] D
74. [✓ A] B C D
75. A [✓ B] C D
76. A B [✓ C] D
77. A B [✓ C] D
78. A [✓ B] C D
79. [✓ A] B C D
80. A [✓ B] C D
81. A B C D
82. A B C D
83. A B C D
84. A B C D
85. A B C D
86. A B C D
87. A B C D
88. A B C D
89. A B C D
90. A B C D
91. A B C D
92. A B C D
93. A B C D
94. A B C D
95. A B C D
96. A B C D
97. A B C D
98. A B C D
99. A B C D
100. A B C D
101. A B C D
102. A B C D
103. A B C D

CURRICULA UPGRADE TRAINING
U.S. DEPARTM . OF EDUCATION GRANT

SESSION I

1. Orientation
2. Law General & N.H.
3. Control Systems
4. Basic Control
5. Shifting
6. Backing
7. Speed Management
8. Test Taking Skills
9. Proficiency Test
10. Referral:
    a) Upon Successful Completion of Proficiency Test Student Progresses to Session II

    *b) Unsuccessful Completion of Proficiency Test, Student Progresses to Makeup Session

SESSION I
TRAINING HOURS = 5

SESSION II

1. Recap
2. Visual Search
3. Communication
4. Space Management
5. Night Operation
6. Extreme Driving Conditions
7. Hazard Perception
8. Test Taking Skills
9. Proficiency Test
10. Referral:
    a) Upon Successful Completion of Proficiency Test Student Progresses to Session III

    *b) Unsuccessful Completion of Proficiency Test, Student Progresses to Makeup Session

SESSION II
TRAINING HOURS = 5

SESSION III

1. Recap
2. Pre-Trip/Post-Trip
3. Air Brakes
4. Skid Control & Recovery
5. Emergency Maneuvers
6. Emergency Reporting
7. Test Taking Skills
8. Proficiency Test
9. Referral:
    a) Upon Successful Completion of Proficiency Test Student Progresses to Session IV

    *b) Unsuccessful Completion of Proficiency Test, Student Progresses to Makeup Session

SESSION III
TRAINING HOURS = 5

SESSIO

1. Recap
2. Cargo Inspection
3. Weights & Balances
4. Securing Cargo
5. Special Cargo
6. Combination Vehicles:
    Coupling/Uncoupling
    Cargo Inspection
7. Curricula Overview
8. Test Taking Skills
9. Proficiency Test
10. Referral:
    a) Upon Successful Completion of Proficiency Test Student Progresses to Commercial Driver's Licensing Examination

    *b) Unsuccessful Completion of Proficiency Test, Student Progresses to Makeup Session

    c) Upon Successful Completion of Makeup Session Student Progresses to Commercial Driver's Licensing Examination

SESSION IV
TRAIN[illegible]OURS = 5

SESSIONS I - IV TOTAL TRAINING HOURS = 20

* [illegible]r to Attachment

MAKEUP SESSIONS

GENERAL CURRICULA AFTER EACH SESSION

1. Individual evaluation of Proficiency Test.
2. Overview of student's weaknesses with concentration on student interaction.
3. Overview of test taking skills.
4. Proficiency Test.
5. Referral
    - a) Upon Successful Completion of Makeup Proficiency Test, Student Progresses to Next Regular Session in Sequence.
    - b) Unsuccessful Completion of Makeup Proficiency Test Student is Referred to Adult Basic Educational Component for Remediation.

MAKEUP SESSIONS

TRAINING HOURS = 5

MAKEUP SESSIONS

TOTAL TRAINING HOURS AS NEEDED

SESSION I - (Yellow)
BASIC OPERATION

This session is designed to help review basic operation of a tractor trailer. It consists of the following units:

I - Orientation -- To define and describe the overall purpose of Commercial Driver's License (CDL), this course, and purpose of this course.

II - Law: General & N.H. -- To define and explain new laws.

III - Control Systems -- To define and describe the components of the Control System, to include instruments and controls.

IV - Basic Control -- Recognition of proper procedures for basic vehicle control.

V - Shifting -- Recognition and proper procedures of shifting gears.

VI - Backing - Recognition and proper procedures of backing.

VII - Speed Management --
A. To recognize the principles of speed management in relationship to driving conditions;
B. To recognize the principles of speed management relative to stopping distances.

VIII - Test Taking Skills -- Help with test taking.

IX - Proficiency Test -- Final step to evaluate text of course.

SESSION I

1. Orientation
2. Control Systems
3. Basic Control
4. Shifting
5. Backing
6. Speed Management
7. Test Taking Skills
8. Proficiency Test
9. Referral:
    a) Upon Successful Completion of Proficiency Test Student Progresses to Session II

    *b) Unsuccessful Completion of Proficiency Test, Student Progresses to Makeup Session

SESSION I
TRAINING HOURS = 5

SE[illegible]ON: I

SUBJECT: Orientation

TIME ALLOTTED: 30 Min.

PAGE: 1 - 1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Define the CDL and the CDL purpose.	1. Definition of professionalism and safety.	1. Overhead Transparencies 1.1-23 1. Lecture - Commercial Driver's Manual Parargaph #1, Page 1-1	1. Asking factual and specific questions.
2. Define the purpose of this course.	2. Purpose statement of the course.	2. Lecture - Commercial Driver's Manual 1-1, 1-4, 1-5, 1-6	2. Proficiency Test.
3. Define the content of course.	3A. Curriculum outline	3A Handout for course	
	3B. a. General knowledge test b. Air brakes test c. Combination vehicle	3B a. Explain these Commercial Driver's Manual Sections 1,2,3 b. Section 5 c. Section 6 of Commercial Driver's Manual	
4. Explain new CDL License Application.	4. Explanation of Application.	4. Overhead Transparencies	
5. Define the content of Session I.	5. Curriculum handout for Session I.	5. Handout - Session I Curriculum Course #1-9	

Visual 3

Professional Driver

Physically and Mentally Qualified

Skilled

Safe

Efficient

Knowledgeable

Fuel Economical

Good Industry Representative

SESSION I

ORIENTATION

Objective

Define the CDL and the CDL purpose.

Topic(s)

Definition of professionalism and safety.

Techniques/Procedures and Activities

Overhead Transparency (1.1-23).

Lecture: CDLM Section I

On October 26, 1986, congress passed the Commercial Motor Safety Act. This law requires each State to meet the same minimum standards for commercial driver licensing. The standards require commercial motor vehicle drivers to get a Commercial Driver´s License (CDL). A "commercial motor vehicle" means a motor vehicle or combination used in commerce to transport passengers or property. You must have a CDL to operate any of the following Commercial Motor Vehicles (CMV´s):

-- A vehicle with a gross vehicle weight rating (GVWR) or more than 26,001 pounds.

-- A trailer with a GVWR of more than 10,000 pounds.

-- A vehicle designed to transport more than 15 persons (including the driver).

-- Any size vehicle which transports hazardous materials which requires placarding.

SESSION I

ORIENTATION

Objective

Define the purpose of this course.

Topic(s)

Purpose statement of the cour[illegible]

Techniques/Procedures and Activities

Lecture: CDLM Pages 1-1, 1-4, 1-5, 1-6, 1-7, 3-2, and 3-3.

Exemptions

The following vehicles are not considered "commercial motor vehicles" and are therefore exempt from the commercial licensing requirements:

- Farm vehicles owned and operated by a farmer within 150 miles radius of the farm.
- Emergency vehicles of a fire department.
- Military vehicles operated by military personnel.
- Recreational vehicles.

Legal Age

- You must be at least 18 years of age to get a CDL.
- You must be at least 21 years of age to haul hazardous materials.
- To drive interstate, you must be at least 21 years of age.

How to Apply for a Commercial Driver's License

You can get an application for a New Hampshire CDL from any office of the Division of Motor Vehicles, any town or city clerk or any police department. This application must be mailed with the proper fee(s) to the Division of Motor Vehicles in Concord.

Upon receipt of your application for a commercial drivers license, you will be notified of the date, time and licensing location to report to for your written knowledge test(s). After you pass the written test(s), another appointment will be made for your road skills test. This separate appointment is necessary due to the length of the drive test.

Handout
Session I

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERCIAL DRIVER LICENSE (CDL) APPLICANTS

GENERAL KNOWLEDGE TEST

The General Knowledge Test is required to be taken by all applicants for a New Hampshire Commercial Driver's License. The test contains 50 multiple choice questions. The material for these questions is taken directly from the New Hampshire Commercial Driver's Manual. The following will give you an idea of the subject matter that will appear on the General Knowledge Test. The following is only a sample of the subjects on which you will be tested. There are other sample questions in the Manual.

1. While driving, what is the proper distance to look ahead?
2. What precautions should be taken when driving on slippery roads?
3. What are truck escape ramps and how do you use them?
4. What are the causes of the various types of vehicle skids?
5. How do drugs impair your safe driving?

Name the type of emergency equipment you should have on the vehicle?

7. Discuss the procedure for conducting a correct pre-trip safety inspection?
8. What are the proper downshifting techniques?
9. What is the correct procedure for passing a vehicle on the road?
10. What is brake fade?
11. What is the proper way to grasp the steering wheel?
12. Describe the proper procedures and precautions for loading a vehicle?
13. What is the correct way of applying brakes in an emergency situation?
14. What is the proper tire tread depth?
15. Are there limits on the types or combination of tires on a vehicle?
16. How do you safety recover from a skid?
17. How does hot weather affect your tires?
18. How do you properly use your vehicle mirrors?
19. When do you need a hazardous materials endorsement on your license?
20. What are the various safety procedures for night driving?
21. What is the correct method of double clutching and shifting?
22. What is meant by controlled braking?
23. How do you safely recover from a tire blowout?
24. How does puddle water affect your brakes?

How do you properly check hydraulic brakes?

26. What do you do in a potential "head-on" collision situation?
27. When do you not use your horn?
28. In New Hampshire what are the legal weights and sizes of commerical vehicles? (See Section 3 of the New Hampshire Commerical Driver's Manual.)

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERICAL DRIVER LICENSE (CDL) APPLICANTS

GENERAL KNOWLEDGE TEST
Page 2

29. In New Hampshire, what are the cargo tie-down requirements? (See Section 3 of the New Hampshire Commercial Driver's Manual)
30. How do you properly care for accident victims?
31. In a break-down situation, describe how you will set-up the emergency triangles.

How much play is allowed in a steering wheel?

3. What is "stab-braking"? Is it allowed?

34. Describe how to stay alert when driving?
35. Discuss the affects of alcohol on your safe driving ability.
36. What is the proper procedure for entering traffic?
37. How do you properly accelerate?
38. What is meant by "keep a safe stopping distance"?
39. What is the proper method of making a right turn when the road is too narrow to stay within your assigned lane?
40. How do you safely cross traffic?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ SECTION 2 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERCIAL DRIVER LICENSE (CDL) APPLICANTS

COMBINATION VEHICLE TEST

The Combination Vehicle Test is required to be taken by all applicants for a Class A (tractor-trailer, doubles, triples and straight truck and trailer) Commercial Driver's License. The Combination Vehicles Test consists of 20 multiple choice questions. The material for these questions is taken directly from the New Hampshire Commercial Driver's Manual. The following will give you an idea of the subject matter that will on the Combination Vehicles Test. The following is only a sample of the subjects which you will be tested. There are other sample questions in [illegible] commerical driver's manual.

1. How is air supplied to the trailer tanks?
2. When should you use the hand valve to park a combination vehicle?
3. What will happen if you cross the air lines when hooking up to an old trailer?
4. What is the allowable air pressure loss per minute for a combination vehicle? ✓
5. What can cause a jackknife?
6. What is the proper method of backing under a trailer to couple?
7. How do you prevent a "rollover"?
8. What colors are used to identify service and emergency air lines?
9. How do you check to see if the kingpin is properly secured into the fifth wheel?
10. What happens to your air brake system if the trailer should break away from the tractor?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ SECTION 6 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERICAL DRIVER LICENSE (CDL) APPLICANTS

AIR BRAKE TEST

The Air Brake Test must be taken by all applicants who wish to operate a commerical vehicle equipped with air brakes. The Air Brake Test consists of 20 multiple choice questions. The material for these questions is taken directly from the Commercial Driver's Manual. The following will give you an idea of the subject matter that will be on the Air Brake Test. The following is only a sample of the subject matter. There are other sample questions in the Commercial Driver's Manual.

When checking air brakes for leaks, what is the permissable loss of air (psi) for straight and combination vehicles?
2. What is brake fade?
3. What is the "service brake"?
4. What is the function of an alcohol evaporator?
5. Why must you drain your air brake tanks?
6. What is the proper method of braking when going down a steep hill?
7. When should parking brakes not be used?
8. At what air pressure (psi) should your low pressure warning come on?
9. How do you check slack adjusters?
10. What does the air compressor governor do?
11. How do spring brakes work?
12. How do you safely conduct an emergency stop?
13. Which braking system responds the quickest air brakes or hydralic brakes?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ CHAPTER 5 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERCIAL DRIVER LICENSE (CDL) APPLICANTS

TANK VEHICLE TEST

The Tank Vehicle Test is required to be taken by CDL applicants who wish to transport any liquid or liquified gaseous material in a permanently attached tank or portable tank having a rated capacity of 1000 gallons or more. The Tank Vehicle Test consists of 20 multiple choice questions. The material for these questions is taken directly from the Commercial Driver's Manual. The following will give you an idea of the subject matter that will appear on the Tank Vehicle Test. The following is only a sample of the subjects on which you will be tested. There are other sample questions in the manual.

1. What is the proper method by which to quickly stop a tank vehicle in an emergency?
2. What dangers do smooth bore tanks present?
3. Why is side-to-side surge dangerous?
4. What is the proper method for tank vehicles to enter emergency truck escape ramps.
5. What do you do if an oncoming vehicle drifts into your lane?
6. How do tank baffles work?
7. In a tank vehicle, how do you quickly steer to avoid an obstacle?
8. How do you properly enter into a curve when driving a tank vehicle?
9. Why are safe stopping distances so important for tank vehicles?
10. What is meant by "outage"?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ SECTION 3.4 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERCIAL DRIVER LICENSE (CDL) APPLICANTS

DOUBLE/TRIPLE TRAILER TEST

The Double/Triple Trailer Test is required to be taken by all applicants who wish to operate doubles and triple trailers. Doubles are allowed only on certain New Hampshire roads. This endorsement will allow drivers to operate triples in states which allow them. New Hampshire does not allow triple trailers. The test consists of 20 multiple choice questions. The material for these questions is taken directly from the New Hampshire Commercial Driver's Manual. The following questions will give you an idea of the subject matter that will appear on the Double/Triple Trailer Test. The following is only a sample of the subjects on which you will be tested. There are other sample questions in the commercial driver's manual.

1. What are "converter dollies"?
2. Describe the type of skid which would most likely happen when driving a set of doubles.
3. How do you properly make a right turn when the truck is too long to turn without swinging wide? ✓
4. What is the best method of vehicle control on a curve?
5. Discuss the proper method of speed management and braking?
6. How do you safely conduct emergency steering?
7. What is the best way to stop all skids?
8. What are "convex" or "spot" mirrors?
9. How do you properly use converter dollies? Do they all have spring brakes?
10. When coupling a converter dolly to the rear trailer, how much space should be between the upper and lower fifth wheel?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ SECTION 6 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERCIAL DRIVER LICENSE (CDL) APPLICANTS

HAZARDOUS MATERIALS TEST

The Hazardous Materials Test is required to be taken by all applicants who wish to transport hazardous materials or waste requiring placards. The test consists of 25 multiple choice questions. The material for these questions is taken directly from the New Hampshire Commercial Driver's Manual. The following will give you an idea of the subject matter that will appear on the Hazardous Materials Test. The following is only a sample of the subjects on which you will be tested. There are other sample questions in the commercial driver's manual.

1. What are placards and where do you attach them on the truck?
2. What does the "list of hazardous substances and reportable quantities" tell you?
3. What is the meaning of "RQ" or "X" on shipping papers?
4. How far from an open fire should you park a vehicle hauling hazardous materials?
5. What is a "transport index" of radioactive materials?
6. When approaching railroad tracks, how far from the nearest track should you stop your vehicle?
7. Who is responsible for packaging and labeling of hazardous materials?
8. What is the proper re-fueling process for vehicles hauling hazardous materials?
9. What is the proper method of loading explosives?
10. What should you do in the event that hazardous materials begin leaking from your truck?
11. Where in your vehicle should the shipping papers be located?
12. When should you check your tires when hauling hazardous materials?
13. What is the loading procedure for bottles of compressed gases?
14. Are there any special training requirements for drivers transporting radioactive material?
15. What is the intent of hazardous materials regulations?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ SECTION 7 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NEW HAMPSHIRE DEPARTMENT OF SAFETY

DIVISION OF MOTOR VEHICLES

STUDY GUIDE FOR COMMERICAL DRIVER LICENSE (CDL) APPLICANTS

PASSENGER VEHICLE TEST

The Passenger Vehicle Test must be taken by all drivers who operate vehicles designed to transport more than 16 passengers including the driver. The Passenger Vehicle Test consists of 20 multiple choice questions. The test contains 50 multiple choice questions. The material for these questions is taken directly from the Section 4 of the New Hampshire Commercial Driver's Manual. The following will give you an idea of the subject matter that will appear on the passenger vehicle test. The following is only a sample of the subject matter. There are other sample questions in the manual.

1. What is the procedure for discharging an unruly passenger?
2. What can you not transport on a bus?
3. How do you safely re-fuel?
4. When doing a pre-trip inspection on the bus, list some important items to check.
5. What are the special requirements for bus tires?
6. What should you know about convex or "spot mirrors" on a bus?
7. How do you handle curves when driving a bus?
8. How does speed and braking management relate to a bus?
9. What do you do when you approach rail road tracks?
10. What types of emergency equipment must be on a bus?
11. When the bus becomes disabled, how do you safely discharge riders?
12. Where should standing passengers stand?
13. When driving a bus, must you always wear a seat belt?
14. Are folding seats allowed in a bus?
15. When approaching a drawbridge in a bus, what do you do?
16. Are non-secured seats allowed on a bus?

FOR CORRECT ANSWERS TO THESE QUESTIONS, READ SECTION 4 OF THE NEW HAMPSHIRE COMMERCIAL DRIVER'S MANUAL.

NOTE TO INSTRUCTOR - Have students take this test ½ way thru Session I.

GENERAL KNOWLEDGE TEST

COMMERCIAL DRIVER LICENSE KNOWLEDGE TEST

During the written test you must not: (a) use any reference materials or notes; (b) visit or talk with any other person(s). To do so may result in test failure.

HOW TO COMPLETE TEST:

Study each question carefully and then mark your choice with a X in the box across from the answer. Sign once at the end of each section you complete.

SECTION 1: GENERAL KNOWLEDGE TEST

This set of questions must be completed by ALL applicants for a commercial driver license.

PASSING GRADE - 10 ERRORS OR LESS

1. Which of these is a good rule to follow when driving at night?
   a) Keep your speed slow enough to stop within the range of your headlights ____
   b) Look directly at oncoming headlights .... ____
   c) Keep your instrument lights bright .... ____

2. The parking brake should be tested while the vehicle is:
   a) Parked .... ____
   b) Moving slowly .... ____
   c) Going downhill .... ____

3. Except for logging vehicles and buses, the maximum gross weight which can be carried by one axle of a motor truck is:
   a) 20,000 lbs. .... ____
   b) 14,500 lbs. .... ____
   c) 9,000 lbs. .... ____

4. You are checking your wheels and rims during a pre-trip inspection. Which of these statements is true?
   a) Rust around wheel nuts may mean that they are loose .... ____
   b) Cracked wheels or rims can be used if they have been welded .... ____
   c) Mismatched lock rings can be used on the same vehicle .... ____

5. The length limit for any single motor vehicle, except for auxillary parts, is:
   a) 40 feet .... ____
   b) 45 feet .... ____
   c) 50 feet .... ____

6. Medical certificates must be renewed every:
   a) Year .... ____
   b) Two years .... ____
   c) Four years .... ____

15

7. If a straight vehicle (no trailer or articulation) goes into a front-wheel skid, it will:
a) Slide sideways and spin out .... ____
b) Go straight ahead but will turn if you turn the steering wheel .... ____
c) Go straight ahead even if the steering wheel is turned .... ____

8. How do you test hydraulic brakes for a leak?
a) Move the vehicle slowly and see if it stops when the brake is applied . ____
b) With the vehicle stopped, pump the pedal three times, apply firm pressure, then hold for five (5) seconds and see if the pedal moves ... ____
c) Step on the brake pedal and the accelerator at the same time and see if the vehicle moves .... ____

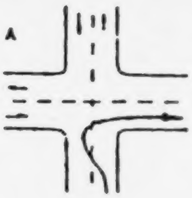
9. For an average driver, driving 55 mph on dry pavement, it will take about ______ to bring the vehicle to a stop:
a) Twice the length of the vehicle .... ____
b) Half the length of a football field .... ____
c) The length of a football field .... ____

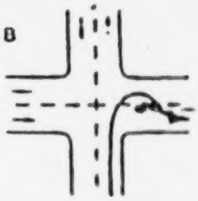
10. You are driving a 40 foot vehicle at 45 mph. Driving conditions are ideal (dry pavement, good visibility). The least amount of space that you should keep in front of your vehicle to be safe is the distance you travel in:
a) 3 seconds .... ____
b) 4 seconds .... ____
c) 5 seconds .... ____

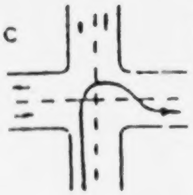
11. Driving under the influence of any drug which makes you drive unsafely is:
a) Permitted if it is prescribed by a doctor .... ____
b) Against the law .... ____
c) Permitted if it is a diet pill or cold medicine .... ____

12. A moving vehicle ahead of you has a red triangle with an orange center on the rear. What does this mean?
a) The vehicle is hauling hazardous materials .... ____
b) It may be a slow moving vehicle .... ____
c) It may be oversized .... ____

13. You wish to turn right from a two-lane, two-way street to another. Your vehicle is so long that you must swing wide to make the turn. Which of these drawings shows how the turn should be made?

A


B


C


A) ____
B) ____
C) ____

14. You are driving a heavy vehicle and must exit a highway using an offramp that curves downhill. You should:
a) Use the posted speed limit for the offramp .... ____
b) Slow down to a safe speed before the turn .... ____
c) Wait until you are in the turn before downshifting .... ____

15. How far should a driver look ahead of the vehicle while driving?
    a) 9-12 seconds .... ____
    b) 12-15 seconds .... ____
    c) 18-21 seconds .... ____

16. Which of these statements about using mirrors is true?
    a) You should look at a mirror for several seconds at a time .... ____
    b) There are "blind spots" that your mirror cannot show you .... ____
    c) A lane change requires you to look at the mirrors twice .... ____

17. You must park on the side of a level, straight, two-lane road. Where should you place the three reflective triangles?
    a) One within 10 feet of the rear of the vehicle, one about 100 feet to the rear, and one about 200 feet to the rear .... ____
    b) One within 10 feet of the rear of the vehicle, one about 100 feet to the rear, and one about 100 feet from the front of the vehicle .... ____
    c) One about 50 feet from the rear of the vehicle, one about 100 feet to the rear, and one about 100 feet from the front of the vehicle .... ____

18. Which of these statements about cargo loading is true?
    a) The legal maximum weight allowed by a state is safe for all driving conditions .... ____
    b) If cargo is loaded by the shipper, the driver is not responsible for overloading .... ____
    c) State regulations dictate legal weight limits .... ____

19. Which of these is the most important thing to remember about emergency braking?
    a) Disconnecting the steering axle brakes will keep the vehicle in a straight line .... ____
    b) Never do it without downshifting first .... ____
    c) If the wheels are skidding, you cannot control the vehicle .... ____

20 You are traveling down a long, steep hill. Your brakes begin to fade and then fail. What should you do?
    a) Downshift .... ____
    b) Pump the brake pedal .... ____
    c) Look for an escape ramp or escape route .... ____

21 The most common cause of serious vehicle skids is:
    a) Driving too fast for road conditions .... ____
    b) Poorly adjusted brakes .... ____
    c) Bad tires .... ____

22. How do you correct a rear-wheel acceleration skid?
    a) Increase acceleration to the wheels .... ____
    b) Apply the brake .... ____
    c) Stop accelerating and push in the clutch .... ____

23. Which of these statements about downshifting is true?
    a) When you downshift for a curve, you should do so before you enter the curve .... ____
    b) When you downshift for a hill, you should do so after you start down the hill .... ____
    c) When you downshift for a curve, you should do so after you enter the curve .... ____

Which of these statements about tires and hot weather driving is true?
a) You should inspect your tires more often .... ____
b) If a tire is too hot to touch, you should drive on it to cool it off .. ____
c) Recapped tires are less likely to fail in hot weather then new tires .. ____

25. What should you do if your vehicle hydroplanes?
a) Start stab braking .... ____
b) Accelerate slightly .... ____
c) Release the accelerator .... ____

26. You should avoid driving through deep puddles or flowing water. But if you must, what will keep your brakes working?
a) Gently pressing the brake pedal while driving through the water .... ____
b) Applying hard pressure on both the brake pedal and accelerator after coming out of the water .... ____
c) Disconnecting the steering axle brakes after coming out of the water .. ____

27. Which fires can you put out with water?
a) Tire fires .... ____
b) Gasoline fires .... ____
c) Electrical fires .... ____

28. Cargo inspections:
a) Should be done after every break during driving .... ____
b) Are only needed if hazardous materials are being hauled .... ____
c) Should be done every 6 hours or 300 miles .... ____

29. The center of gravity of a load:
a) Should be kept as high as possible .... ____
b) Can make a vehicle more likely to roll over on curves .... ____
c) Is only a problem if the vehicle is overloaded .... ____

30. Which of these statements about backing a heavy vehicle is true?
a) You should avoid backing whenever you can .... ____
b) When you use a helper, he/she should use clear voice (spoken) signals . ____
c) It is safer to back toward the right side of the vehicle than to the driver's side .... ____

31. You do not have a Hazardous Materials Endorsement on your Commercial Driver License. When can you legally haul hazardous materials?
a) Never .... ____
b) Only when the load does not require placards .... ____
c) Only when the shipment will not cross state lines .... ____

32. Which of these statements about staying alert to drive is true?
a) A half-hour break for coffee will do more to keep you alert than a half-hour nap .... ____
b) There are drugs that can overcome being tired .... ____
c) The only thing that can cure fatigue is sleep .... ____

33. Which of these statements about drinking alcohol is true?
a) Some people aren't affected by drinking .... ____
b) A few beers have the same effect on driving as a few shots of whiskey . ____
c) Coffee and fresh air can sober a person up .... ____

34. As the Blood Alcohol Concentration (BAC) goes up, what happens?
a) The effects of alcohol decrease .... ____
b) The person becomes more dangerous if allowed to drive .... ____
c) The drinker can sober up in less time .... ____

35 A driver's trip log, if required:
a) May be brought up to date once a week .... ____
b) Is also called a "tachograph" .... ____
c) Must be shown immediately when an officer requests it .... ____

36. Which of these statements about double-clutching and shifting is true?
a) It should not be done when the road is slippery .... ____
b) You can use the sound of the engine to tell you when to shift .... ____
c) You must use both clutch pedals .... ____

37. Which of these statements about brakes is true?
a) The heavier a vehicle or the faster it is moving, the more heat the brakes have to absorb to stop it .... ____
b) Brakes have more stopping power when they get very hot .... ____
c) Brake drums cool very quickly .... ____

38. Measured from the road surface, the maximum legal height of any vehicle and load not needing a permit is:
a) 12 feet .... ____
b) 13 feet .... ____
c) 14 feet .... ____

39. Which of these statements about speed management is true?
a) Empty trucks always stop in a shorter distance than fully loaded ones . ____
b) As the speed of a vehicle doubles, its stopping distance also doubles . ____
c) Choose a driving speed that lets you stop in the space that you can see ahead .... ____

40. You are driving a 40 foot vehicle at 35 mph. Driving conditions are ideal (dry pavement, good visibility). What is the least amount of space that you should keep in front of your vehicle to be safe is the distance you travel in:
a) 3 seconds .... ____
b) 4 seconds .... ____
c) 5 seconds .... ____

41. The key principle in balancing cargo weight is to keep the load:
a) To the front .... ____
b) To the rear .... ____
c) Centered .... ____

High beams should:
a) Be used whenever it is safe and legal to do so .... ____
b) Be turned on when an oncoming driver does not dim his/her lights ...... ____
c) Be dimmed when you are within 100 feet of another vehicle .... ____

43. Stab braking:
a) Should never be used .... ____
b) Involves locking the wheels .... ____
c) Involves steady pressure on the brake pedal .... ____

44. Brakes can get wet when you drive through a heavy rain. Wet brakes can cause:
a) Wheel lockup .... ____
b) Trailer jackknife .... ____
c) Both of the above .... ____

45. With certain specified exceptions, the load on any vehicle may not entend beyond the front bumpers or tires more than:
a) 2 feet .... ____
b) 3 feet .... ____
c) 4 feet .... ____

46. You are checking your steering and exhaust systems during a pre-trip inspection. Which of these statements is true?
a) Steering wheel play of more than 10 degrees (2 inches on a 20-inch steering wheel) can make it hard to steer .... ____
b) Leaks in the exhaust system are not a problem if they are outside the cab .... ____
c) Some leakage of power steering fluid is normal .... ____

47. Your vehicle is in a traffic emergency and may collide with another vehicle if you do not take action. Which of these is a good rule to remember at such a time?
a) Stopping is always the safest action in a traffic emergency .... ____
b) Heavy vehicles can almost always turn more quickly than they can stop . ____
c) Leaving the road is always more risky than hitting another vehicle .... ____

48. If a vehicle is loaded with very little weight on the drive axle, what can happen?
a) Poor traction .... ____
b) Damage to drive axle tires .... ____
c) Better handling .... ____

49. Cargo that can shift should have at least ____ tiedown(s).
a) 2 .... ____
b) 3 .... ____
c) 4 .... ____

50. When a vehicle is carrying a load at night, which extends four feet or more beyond the rear of the body, there must be ____ at the extreme end of the load.
a) 1 red light .... ____
b) 2 red lights .... ____
c) 1 red flag .... ____

I certify under penalty of perjury that I have personally answered these questions.
(Perjury is punishable by imprisonment, fine, or both.)

Sign Your Name Here X ______________________________________

SESSION I

ORIENTATION

Objective

Define the content of this course.

Topic(s)

General knowledge test:
    Air brakes test.
    Combination vehicle test.

Curriculum handout for course.
    TT skills.

Techniques/Procedures and Activities

Lecture/Information

NEW HAMPSHIRE
DEPARTMENT OF SAFETY
DIVISION OF MOTOR VEHICLES
10 HAZEN DRIVE
CONCORD, N.H. 03305

One
National
Standard
For
Commercial
Drivers

EXPIRATION NOTICE FOR HOLDERS OF:

COMMERCIAL TRACTOR TRAILER DRIVER'S LICENSES
COMMERCIAL HEAVY DRIVER'S LICENSES
COMMERCIAL LIGHT DRIVER'S LICENSES

Your New Hampshire Commercial drivers license will soon expire. In the interest of improving traffic safety on our roadways, New Hampshire has taken the lead in implementing the new federal commercial motor vehicle licensing standards, which take effect July 1, 1989.

THE NEW COMMERCIAL LICENSING STANDARDS APPLY TO YOU IF YOU DRIVE ANY OF THE FOLLOWING VEHICLES:

- a vehicle with a gross vehicle weight rating of 26,001 pounds or more;
- a trailer with a gross vehicle weight rating of 10,001 pounds or more;
- any vehicle which transports hazardous materials which require placarding;
- a bus designed to transport more than 16 passengers, including the driver.

YOUR RENEWAL PROCESS IS AS FOLLOWS:

- Study the Commercial Driver License Manual available at all offices of the Division of Motor Vehicles. It provides all the information upon which the new written and driving tests are based.
- Complete and return the *enclosed application* with all fees using the mailing envelope provided.
- You will be notified by mail of the date, time and place for your written test(s).
- Bring the following items to your test(s).
  - Your appointment notice.
  - Your current driver license.
  - Your Social Security Number.

DO NOT bring a test vehicle to your appointment for the written test(s). If you are required to take a road test, a separate appointment will be made after you have passed the written test(s). Your appointment notice for the written test(s) will indicate if you need to take the road test.

TO AVOID ANY DELAY IN PROCESSING YOUR TEST APPOINTMENT, YOU MUST RETURN THE COMPLETED COMMERCIAL DRIVER LICENSE APPLICATION AND FEES WITHIN 15 DAYS AFTER RECEIVING THIS NOTICE.

IMPORTANT NOTICE
IF YOU NO LONGER NEED TO HOLD A COMMERCIAL DRIVERS LICENSE, IGNORE THIS NOTICE. IN 6 TO 8 WEEKS, YOU WILL RECEIVE A STANDARD RENEWAL APPLICATION FORM FOR A CLASS "D" LICENSE (REPLACES OLD "OPERATOR" LICENSE) WHICH YOU SHOULD COMPLETE AND RETURN AS INSTRUCTED.

DSMV 321

FOR FURTHER INFORMATION, CALL (603) 271-2490

STATE OF NEW HAMPSHIRE
CATION FOR A COMMERCIAL DRIVERS LICENSE AND/OR ENDORSEMENTS
(PLEASE TYPE OR PRINT CAREFULLY)

NAME: ______________________________
FIRST MIDDLE LAST

ADDRESS: If your mailing address utilizes PO Box or RFD numbers only, you must also record your residential address for departmental records.

MAILING ADDRESS	RESIDENCE
STREET	STREET
/ /	/ /
TOWN/CITY STATE ZIP	TOWN/CITY STATE ZIP

SOCIAL SECURITY NUMBER ______ - ______ - ______ HT ________ WT ________

DATE OF BIRTH ___/___/___ (Mo Day Year) SEX ________ COLOR EYES ________ COLOR HAIR ________

CLASS (Check one)	☐ A — Combination of vehicles ☐ B — Single Vehicles weighing 26,001 lbs. or more ☐ C — Single Vehicles weighing 26,000 lbs. or less, or a Bus designed to transport 16 or more occupants	}	$40.00
ENDORSEMENTS:	☐ H — Hazardous Materials		$10.00
	☐ N — Tank Vehicles		$10.00
	☐ P — Passenger Vehicles (16 or more occupants)		$10.00
	☐ T — Double/Triple Trailers		$10.00
MOTORCYCLE:	☐ M — If you hold a current OUT-OF-STATE license that includes a motorcycle endorsement and wish to retain this privilege		$35.00
	☐ M — If you hold a current NEW HAMPSHIRE license that includes a motorcycle/motor driven cycle endorsement and wish to retain this privilege		$5.00

TOTAL FEES DUE: ☐

PART 1: QUESTIONS

A. Is the vehicle you currently operate or intend to operate equipped with air brakes? Yes ☐ No ☐

B. I hold or previously held a Driver License issued in this or another State/Country? Yes ☐ No ☐ If "yes" you must complete the following questions concerning your most recent license.

1. My most recent license is/was a Commercial Driver License (as defined in Instructions)? Yes ☐ No ☐
2. Class of License: ______________
3. Date of Expiration ___/___/___ (Month Day Year)
4. Name appearing on License: ______________
5. License/Identification Number ______________
6. State/Country of Issue: ______________
7. List Restrictions appearing thereon: ______________
8. List all Endorsements appearing thereon: ______________

THIS SECTION FOR OFFICIAL USE ONLY

CODE
CLASS: ________
ROAD TEST: ________
F/R BRAKES: ________
HAZMAT: ________
TANK: ________
PASS: ________
TRAILER: ________
MTRCYCLE: ________
CLIS: ________
INITIALS ________ MM / DD / YY

Federal law requires that any applicant for a Commercial Driver License must provide his social security number, but New Hampshire law provides that an individual may request that his social security number not be shown on his Commercial Drivers License.

☐ I wish that my Com Driver License not show my social security number.

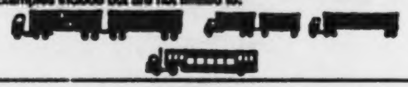
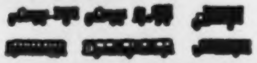
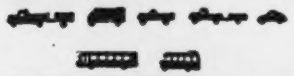
COMPLETE BOTH SIDES PLICATION, SIGN ON BACK AND RETURN WITH TOTAL FEES TO:
Department of Safety
P.O. Box [illegible] Concord, NH [illegible]

Right

INSTRUCTIONS

THIS IS NOT A LICENSE TO OPERATE A COMMERCIAL MOTOR VEHICLE. IT IS ONLY AN APPLICATION WHICH CAN BE PROCESSED ONLY AFTER COMPLETION OF ALL QUESTIONS ON PART 1 (Face of Application), COMPLETION OF ALL THE CERTIFICATIONS BELOW (Part 2), SIGNING THE APPLICATION WHERE INDICATED, AND REMITTING ALL NECESSARY FEES.

NEW HAMPSHIRE COMMERCIAL DRIVERS LICENSE CLASSIFICATIONS EFFECTIVE JULY 1, 1989

WITH THIS CLASS LICENSE	YOU MAY DRIVE	RELATED ENDORSEMENTS
A	Any combination of vehicles with a GCWR of 26,001 or more pounds provided the GVWR of the vehicle(s) being towed is in excess of 10,000 pounds. (Holders of a Group A license may, with any appropriate endorsements, operate all vehicles within Groups B and C.) Examples include but are not limited to: 	Double/Triple Trailers Tank Vehicles Tank Vehicles With HAZMAT HAZMAT Passenger Vehicles
B	Any single vehicle with a GVWR of 26,001 or more pounds, or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR. (Holders of a Group B license may, with any appropriate endorsements, operate all vehicles within Group C.) Examples include but are not limited to: 	Tank Vehicles Tank Vehicles With HAZMAT HAZMAT Passenger Vehicles
C	Any single vehicle less than 26,001 pounds GVWR, or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR. This group applies to vehicles which are placarded for hazardous materials or designed to transport 16 or more persons, including the operator. Examples include but are not limited to: 	HAZMAT Passenger Vehicles

The vehicle in which you will take the road skills tests must meet the written description for that class. If you wish to be licensed to drive a vehicle with air brakes, the vehicle in which you will be tested must be equipped with air brakes. The above vehicle silhouettes typify, but do not fully cover, the types of vehicle falling within each class.

HOW TO SELECT THE ENDORSEMENTS:

H. **Hazardous Materials:** This endorsement must appear on your commercial drivers license if you drive or intend to legally drive any commercial vehicle which transports hazardous materials and is required to be placarded under State or Federal regulations. Applicants for this endorsement must pass a separate Hazardous Materials knowledge test to obtain this endorsement. Please study the appropriate sections of the N.H. Commercial Driver's Manual.

N. **Tank Vehicles:** This endorsement must appear on your commercial drivers license if you drive or intend to legally drive any commercial vehicle designed to transport any liquid in a tank that is either permanently or temporarily attached to the vehicle or the chassis. This endorsement is not required for portable tanks having a rated capacity under 1,000 gallons. Applicants must pass a separate Tank Vehicle knowledge test to obtain this endorsement. Please study the appropriate sections of the N.H. Commercial Driver's manual. Note: If you are required to take a road skills test, the tank vehicle in which you will take the test must be empty or no test will be given.

P. **Passenger Vehicles:** This endorsement must appear on your commercial drivers license if you drive or intend to drive any commercial vehicle designed to transport 16 or more persons including the driver. Applicants for this endorsement must pass a separate Passenger Vehicle knowledge test. Please study the applicable section of the N.H. Commercial Driver's manual.

T. **Double/Triple Trailers:** This endorsement must appear on your commercial drivers license if you drive or intend to legally haul double or triple trailers. Applicants for this endorsement must pass a separate Double/Triple Trailer knowledge test. Please study the applicable sections of the N.H. Commercial Driver's manu[illegible]: It is illegal to operate triple trailers in New Hampshire. This endorsement will however, allow you to haul [illegible] in those states which allow such vehicles.

INSTRUCTIONS

The following will assist you in answering the questions in Parts 1 and 2.

Part 1 - Questions (On front of form)

Question A: If you desire to operate a vehicle EQUIPPED WITH AIR BRAKES, your road test (if required) must be conducted in a vehicle which is EQUIPPED WITH AIR BRAKES. If not, your license will be restricted to the operation of vehicles not EQUIPPED WITH AIR BRAKES.

Question B: Please indicate if you currently hold or previously held a valid drivers license. This includes both commercial and private automobile licenses. If you answer "yes", please complete sub-questions 1-8 immediately following Question B.

Part 2 - Certifications

Question 1: In accordance with the "single license" requirement, commercial licenses can only be issued to residents of New Hampshire.

Question 2: All assessed New Hampshire resident taxes must be paid before a commercial drivers license can be issued.

Question 3: Applicants must indicate if they have any physical or mental handicaps which may interfere with their safe operation of a motor vehicle.

Question 4: Please indicate if your driver's license is currently under default, suspension, revocation or if there is any such action pending in any state or country.

Question 5: Please indicate if your driver's license was suspended, revoked or cancelled anytime during the two years immediately prior to this application.

Question 6: Please indicate if you are currently required to file proof of motor vehicle liability insurance or surety in any state or country.

Question 7: Commercial Drivers who operate across state lines (interstate) must meet all the federal requirements contained in FMCSR Part 391, including physical examination. See your employer for details.

Question 8: Federal and state law requires drivers to have only one driver's license - one which is issued by their home state. All out of state licenses must be surrendered at the time of your test. If not, a license will not be issued. Drivers who maintain more than one license face a federal fine of $2,500.00.

Question 9: Please indicate if during the past two years immediately preceding this application you were involved in a motor vehicle accident which resulted in your conviction of violating any motor vehicle control laws. This applies to both commercial vehicles and private automobiles.

Question 10: Please, indicate if, immediately prior to this application, you have had at least two years actual driving experience in a commercial vehicle representative of the license class for which you are applying.

Question 11: Please indicate if you have previously passed any state administered road test in a vehicle which is included in the classification type for which you are applying (see vehicle classifications on back of form). If you have not, and wish to be considered for an exemption to the road test, your employer must certify that you have safely operated a "representative" vehicle for at least two years immediately prior to this application.

THIS IS NOT A LICENSE TO OPERATE A COMMERCIAL MOTOR VEHICLE. [illegible] ONLY AN APPLICATION WHICH CAN BE PROCESSED ONLY AFTER COMPLETION [illegible] QUESTIONS ON PART 1 (Face of Application), COMPLETION OF THE CERTIFICA[illegible]S BELOW (Part 2), SIGNING THE APPLICATION BELOW, AND REMITTING ALL NECESSARY FEES.

CERTIFICATIONS

(See Instructions and Definitions at Left)

1. Are you a resident of the State of New Hampshire? Yes ☐ No ☐ (As a resident you may be liable for the Interest and Dividends Tax (RSA 77). Contact Dept. of Rev. Adm., 61 South Spring Street, Concord, 03301 Tel. (603) 271-2191)

2. Have you paid all New Hampshire Resident Taxes for which you are liable? Yes ☐ No ☐

3. Do you have any physical or mental handicaps which are detrimental or would incapacitate you from holding a license? Yes ☐ No ☐

4. Is your license and/or operating privileges to drive a motor vehicle or commercial motor vehicle under default, suspension or revocation, in this or any other state/country? Yes ☐ No ☐

5. Have you been disqualified from operating any motor vehicle within the past two (2) years? Yes ☐ No ☐

6. Are you required to file proof of insurance by any state/country as a result of a default, suspension, revocation or motor vehicle accident? Yes ☐ No ☐

7. Do you meet the Federal Driver qualifications and requirements for interstate commerce (Federal Motor Carrier Safety Regulations, Part 391)? Yes ☐ No ☐

8. During the two years immediately prior to this application, have you at anytime held a valid commercial driver license OTHER than the one issued by the state of Primary Residence? Yes ☐ No ☐

9. In the past two (2) years, were you involved in a motor vehicle accident which resulted in your violation of any local or State motor vehicle law? Yes ☐ No ☐

10. Immediately prior to this application, have you had at least two (2) years actual driving experience in a vehicle representative of the license class for which you are applying? Yes ☐ No ☐

11. Have you previously passed a driving skills test in a vehicle which represents the commercial drivers license classifications and/or endorsements for which you are applying? Yes ☐ No ☐

If your answer to question 11 is "no", in lieu of a skills test, your most recent employer may certify that you have had a minimum of two (2) years driving a representative vehicle.

EMPLOYER'S CERTIFICATION

Company ______________________________

X ______________________________ DATE: ____/____/____
Employer's Signature (Signed under penalty of perjury) month day year

12. Telephone Number (Daytime): (_____) ____________

13. Date of application: ______/______/______
month day year

14. I hereby certify, under penalty of perjury, that all statements on this application are true, and that my birthdate is as shown on the application. (Making a false statement on this application is punishable by imprisonment, fine or both.)

X ______________________________
Applicant's Signature

Motor Vehicle Substations

To better serve the public, the Department of Safety has established thirteen motor vehicle substations conveniently located throughout new Hampshire.

Berlin	209 Main Street, Berlin, NH
Epping	Ralph W. Caswell Safety Building, Route 125, Epping, NH
Keene	Motor Vehicle/State Police Substation, Keene, NH
Lebanon	57 Mechanic Street, Lebanon, NH
Manchester	87 Elm Street, Manchester, NH
Tamworth	Motor Vehicle/State Police Substation, Tamworth,NH
Nashua	38 Elm Street, City Hall Annex, Nashua, NH
Milford	4 Meadowbrook Drive, Milford, NH
Rochester	59 Hanson Street, Rochester, NH
Salem	Salem Municipal Building, Geremonty Drive, Salem, NH
Twin Mountain	Motor Vehicle/State Police Substation, Route 302, Twin Mountain, NH
Dover Point	Motor Vehicle Substation, 50 Boston Harbor Road, Dover Point, NH
Claremont	37 Water Street, Mill #1, Claremont, NH

Upon receipt of your CDL application and fees, you will be notified of the date, time, and location to report to for your written knowledge test(s). Every effort will be made to schedule your test(s) at one of the above offices closest to your home. After passing the written test, you will be scheduled for a road skills test.

Lost License

If your commercial driver's license is lost or destroyed, you must apply for a copy. Applications can be obtained at offices of the Division of Motor Vehicles, town or city clerks, or police stations. When the Division of Motor Vehicles receives this application and fee, you will be sent a temporary license with an appointment telling you where and when to go for another photo license.

Change of name or address

The law says that you must tell the Division of Motor Vehicles in writing as soon as you change your name or address. ALWAYS INCLUDE THE NAME, ADDRESS, AND DATE OF BIRTH ON YOUR LICENSE AND THE CORRECTED NAME AND/OR ADDRESS.

Test Procedure

To get a CDL, you must pass the required written knowledge and road skills test. These tests are discussed in Section 1.1 of this manual.

Two appointments will be made for your test. The first appointment will be for the multiple choice knowledge tests. If you pass the knowledge tests, you will be scheduled for the road skills tests at a later date. You **must** pass the written knowledge tests prior to taking the road skills test.

This manual is designed to help you pass the knowledge and road skills tests. To find out which parts of this manual you should study, see Figure 1-1. **THESE TESTS WILL BE HARD ONLY IF YOU HAVE NOT STUDIED THIS MANUAL. TO PASS THESE TESTS, YOU MUST KNOW THE FACTS IN THIS MANUAL. YOU SHOULD READ THIS MANUAL MORE THAN ONCE.**

What to bring to your driver test
-- Your appointment slip.
-- All driver's licenses issued to you by any state.
-- Three forms of positive identification - official papers which show your name, address and date of birth.
-- Social Security Number.

Eyesight Screening

Before you take the commercial driver knowledge test(s), you will be required to take the eye test. The eyesight screening will measure your visual acuity (how clearly you see). To pass, you must be able to read the 20/40 vision line with both eyes. If you are blind in one eye, you must read the 20/30 line.

If you must wear glasses or contact lenses to pass the eyesight screening, you will have to wear them whenever you drive. If you fail the eyesight screening, no other part of the tests will be given. You will have to visit an eye doctor to see if your vision can be corrected so that you can pass the eyesight screening at a later date.

Commercial License Expiration

Your commercial driver's license runs out on the 4th anniversary of your date of birth following the date of issuance; and you must get a new one.

Commercial License Renewal

About two months before your license is due to expire, you will receive a license renewal application in the mail.

This application includes a date, time, and place for you to renew your license. If you can't keep this appointment, return the application and fee with a note and ask for another appointment. If you are away from New Hampshire and cannot return before your license runs out, tell us in writing and you will be sent a temporary license.

You will not get your renewal application if you have changed your address and did not tell the Division of Motor Vehicles of the change, or if your license is under revocation or suspension.

Renewing your driver license is your responsibility, not ours. If you do not get your license renewal application in the mail, you should go to any office of the Division of Motor Vehicles, any town or city clerk, or any police department to pick up a license renewal application.

Renewal of Hazardous Materials Endorsement

At each renewal, drivers who wish to maintain their license endorsement to haul hazardous materials or waste, must retake and pass the hazardous materials endorsement test. This will ensure that drivers are updated on any new safety regulations relative to the transportation of hazardous materials.

SESSION I

ORIENTATION

Objective

Define the content of Session I.

Topic(s)

Curriculum handout for Session I

Techniques/Procedures and Activities

Handout - Session I
Curriculum Course #1-9

8

S[illegible]ION: I

SUBJECT: Laws

TIME ALLOTTED: 45 Min.

PAGE: 1 - 2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Define and explain the new CDL Laws.	1. CDL Laws, Federal and State.	1. Lecture - Commercial Driver's Manual 1-8, 1-9 Federal Motor Carrier Regulation (Logs) 395.8 (Seat Belts) 396.12 State Law 96" up to 102" pg 3-2, 3-3, CDLM Overhead Transparencies Commercial Driver's Manual 1-2, 1-3	1. Asking factual and specific questions. 2. Proficiency Test.

1.2 Other Safety Act Rules

There are other new Commercial Motor Vehicle Safety Act rules which affect drivers.

- You cannot have more than one license. If you break this rule, a court may fine you up to $5000 or put you in jail. Keep your home state license and return any others.
- If you are an experienced commercial driver and have a safe driving record, you may not need to take the skills test to get your CDL.
- You must notify your employer within 30 days of a conviction for any traffic violation (except parking). This is true no matter what type of vehicle you were driving.
- You must notify your motor vehicle licensing agency within 30 days if you are convicted in any other state of any traffic violation (except parking). This is true no matter what type of vehicle you were driving.
- You must notify your employer if your license is suspended, revoked, or cancelled, or if you are disqualified from driving.
- You must give your employer information on all driving jobs you have held for the past 10 years. You must do this when you apply for a commercial driving job.
- No one can drive a Commercial Motor Vehicle after April 1, 1992 without a CDL. A court may fine you up to $5000 or put you in jail for breaking this rule.
- Your employer can not let you drive a Commercial Motor Vehicle if you have more than one license or if your CDL is suspended or revoked. A court may fine the employer up to $5000 or put him/her in jail for breaking this rule.
- All states will be connected to one computerized system to share information about CDL drivers. The States will check on drivers' accident records and be sure that drivers don't get more than one CDL.
- You will lose your CDL for at least one year for a first offense:
  - if you drive a Commercial Motor Vehicle (CMV) under the influence of alcohol or a controlled substance (for example, illegal drugs).
  - if you leave the scene of an accident involving a CMV you were driving.
  - if you used a CMV to commit a felony.

  If the offense occurs while you are operating a CMV that is placarded for hazardous materials, you will lose your CDL for at least 3 years. You will lose your CDL for life for a second offense. You will also lose your CDL for life if you use a CMV to commit a felony involving controlled substances.

- You will lose your CDL:
  - for at least 60 days if you have committed 2 serious traffic violations within a 3-year period involving a CMV.
  - for at least 120 days for 3 serious traffic violations within a 3-year period.

"Serious traffic violations" are excessive speeding (15 mph above posted speed limit), reckless driving, and traffic offenses committed in a CMV in connection with fatal traffic accidents.

- If you drive when your blood alcohol concentration is .04 percent or more, you are driving under the influence of alcohol. You will lose your CDL for one year for your first offense. You will lose it for life for your second offense. If your blood alcohol concentration is less than 0.04 percent but you have any detectable amount, you will be put out-of-service for 24 hours.

These rules will improve highway safety for you and for all highway users.

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89-0357
05

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Sort bill [illegible]
96:10V

Chapter 48

HB 51

STATE OF NEW HAMPSHIRE

In the year of Our Lord one thousand
nine hundred and eighty-nine

AN ACT

relative to a vehicle width
on certain highways.

Be it Enacted by the Senate and House of Representatives in General Court convened:

48:1 Width. Amend RSA 266:12, I, to read as follows:

I. A vehicle in excess of [96] *102* inches in width [or, in the case of a bus or in the case of a vehicle being operated on any way with lanes at least 12 feet wide, in excess of 102 inches in width].

48:2 Effective Date. This act shall take effect 60 days after its passage.

Approved April 19, 1989
Effective June 18, 1989

Section 1: Commercial Driver License (CDL) Program and Qualification

On October 26, 1986, Congress passed the Commercial Motor Vehicle Safety Act. This law requires each State to meet the same minimum standards for commercial driver licensing. The standards require commercial motor vehicle drivers to get a Commercial Driver's License (CDL). A "commercial motor vehicle" means a motor vehicle or combination used in commerce to transport passengers or property. You must have a CDL to operate any of the following Commercial Motor Vehicles (CMV's):

- A vehicle with a gross vehicle weight rating (GVWR) of more than 26,000 pounds.
- A trailer with a GVWR of more than 10,000 pounds.
- A vehicle designed to transport more than 15 persons (including the driver).
- Any size vehicle which transports hazardous materials which requires placarding.

SEE PAGE 1-3 TO DETERMINE THE SPECIFIC CLASS OF LICENSE REQUIRED FOR YOUR NEEDS.

Exemptions

The following vehicles are not considered "commercial motor vehicles" and are therefore exempt from the commercial licensing requirements:

- Farm vehicles owned and operated by a farmer within 150 miles radius of the farm.
- Emergency vehicles of a fire department.
- Military vehicles operated by military personnel.
- Recreational vehicles.

Legal Age

- You must be at least 18 years of age to get a CDL.
- You must be at least 21 years of age to haul hazardous materials.
- To drive interstate, you must be at least 21 years of age.

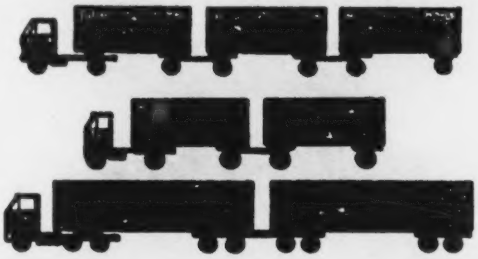
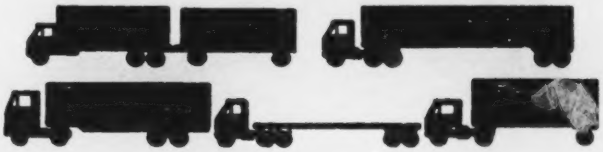
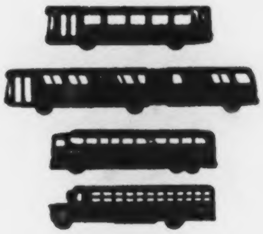
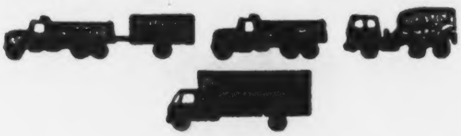
How to Apply for a Commercial Driver's License

You can get an application for a New Hampshire CDL from any office of the Division of Motor Vehicles, any town or city clerk or any police department. This application must be mailed with the proper fee(s) to the Division of Motor Vehicles in Concord. SEE PAGE 1-3 TO DETERMINE THE SPECIFIC CLASS OF LICENSE REQUIRED FOR YOUR NEEDS.

This Section Explains

- ***Licensing and Test Procedures***
- ***Other Safety Act Rules***

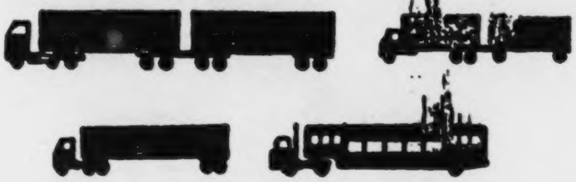
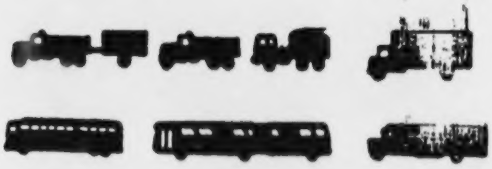
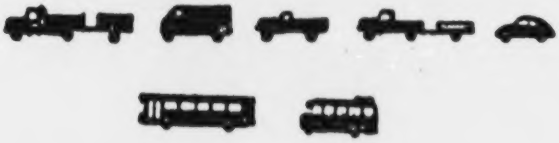
How To Use This Manual

If you want to get a license to drive this type of vehicle or a similar tank vehicle*	Study these sections of the driver's manual
	Section 1: Introduction Section 2: Driving Safely Section 3: Cargo* Section 5: Air Brakes Section 6: Combination Vehicles Section 7: Haz Mat (If needed)
	Section 1: Introduction Section 2: Driving Safely Section 3: Cargo* Section 5: Air Brakes Section 6: Combination Vehicles (except double / triple trailer info) Section 7: Haz Mat (If needed)
	Section 1: Introduction Section 2: Driving Safely Section 3: Cargo Section 4: Passengers Section 5: Air Brakes (if needed)
	Section 1: Introduction Section 2: Driving Safely Section 3: Cargo* Section 5: Air Brakes (if needed) Section 7: Haz Mat (If needed)
(CDL required only if these vehicles are used to haul hazardous materials) 	Section 1: Introduction Section 2: Driving Safely Section 3: Cargo* Section 7: Haz Mat

* If you want a tank vehicle endorsement, study especially Section 3.4

Figure 1-1. How To Use This Manual

NEW HAMPSHIRE COMMERCIAL DRIVERS LICENSE CLASSIFICATIONS

h this Class License	YOU MAY DRIVE	RELATED ENDORSEMENTS
A	Any combination of vehicles with a GVWR of 26,001 or more pounds provided the GVWR of lthe vehicle(s) being towed is in excess of 10,000 pounds. (Holders of a Group A License may, with any appropriate endorsements, operate all vehicles within Groups B and C.) Examples Include, but are not limited to: 	Double/Triple Trailers Tank Vehicles Tank Vehicles with HAZMAT HAZMAT Passenger Vehicles
B	Any single vehicle with a GVWR of 26,001 or more pounds , or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR. (Holders of a Group A License may, with any appropriate endorsements, operate all vehicles within Groups B and C.) Examples Include, but are not limited to: 	Double/Triple Trailers Tank Vehicles Tank Vehicles with HAZMAT HAZMAT Passenger Vehicles
C	Any single vehicle less thatn 26,001 pounds GVWR, or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR. This group applies to vehicles which are placarded for hazardous materials or designed to transport 16 or more persons, including the operator. Examples Include, but are not limited to: 	Double/Triple Trailers Tank Vehicles Tank Vehicles with HAZMAT HAZMAT Passenger Vehicles

e vehicle in which you will take the road skills test must meet the written description for that class. If you wish to be censed to drive a vehicle with air brakes, the vehicle in which you will be tested must be equipped with air brakes. [illegible] above vehicle [illegible], but do not fully cover, the [illegible]

1-2

Federal Motor Carrier Safety Regulations— Requirements for Inspection

- FMCSR 392.7
  - "No Motor Vehicle Shall Be Driven Unless the Driver Satisfies Himself That the Following Parts Are in Good Working Order."
    - Horn
    - Windshield Wiper
    - Steering
    - Service Brakes
    - Parking Brakes
    - Lights and Reflectors
    - Tires
    - Mirrors
    - Coupling Device
- FMCSR 392.8
  - Requires Check for Emergency Equipment
- FMCSR 392.9
  - Requires Inspection of Cargo Securement
- FMCSR 397
  - Requires Following Rules for Hazardous Materials and Required Placarding

3- 1

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TOW TRUCK - TOWED VEHICLE COMBINATIONS

	G V W R						
	Tow Truck		Towed Vehicle		GCWR		CDL Group (FHWA)
1.	<26,001#		<10,000#		<26,001#		N/A
2.	<26,001#		>10,000#		<26,001#		N/A
3.	<26,001#		<10,000#		>26,001#	Combined over	N/A
4.	<26,001#		>10,000#		>26,001#	Combined over	A
5.	>26,001#	Truck over	<10,000#	Towed vehicle under	>26,001#		B
6.	>26,001#		>10,000#		>26,001#		A

Illustrative examples:

1. Ford F-350 Tow truck (11,000 GVWR) towing Buick Century (4164 GVWR)
2. Ford Superduty Tow truck (14,500 GVWR) towing Ford F-350 (11,000 GVWR)
3. Chevy C-70 Tow truck (18,500 GVWR) towing Ford F-250 (HD) (8,800 GVWR)
4. Chevy C-70 Tow truck (18,500 GVWR) towing Ford Superduty (14,500 GVWR)
5. GMC Brigadier (29,900 GVWR) towing Ford F-250 (HD) (8,800 GVWR)
6. Freightliner Tow truck (50,000 GVWR) towing GMC Brigadier (29,900 GVWR)

BASIC RULE:

ANYTIME THE COMBINED WEIGHT OF TRACTOR AND TRAILER OR TOWED VEHICLE IS OVER 26,000 Ⓐ is the class

WITH TWO EXEPTIONS:

> GREATER THAN

< LESS THAN

1. IF TRACTOR/OR TOW VEHICLE IS LESS THAN 26,000 AND THE TRAILER IS LESS THAN 10,000 (OPERATOR)
2. IF TRACTOR/OR TOW VEHICLE IS OVER 26,000 AND THE TRAILER OR TOWED VEHICLE IS UNDER 10,000 Ⓑ is the class

7-17-89

Sizes and Weights

HB 51 supported by NHMTA, now Chapter 48 increases vehicle width from 96" to 102" in the case of any vehicle being operated on any way with lanes at least 12 feet wide. This was effective June 18, 1989.

HB 365, now Chapter 115, also supported by NHMTA provides new definitions of "automobile transporter" and "automobile transporter stingersteered". It provides for: a conventional automobile transporter combination not in excess of 65 feet exclusive of a 3 foot rear overhang. Saddlemount plus fullmount combinations not in excess of 65 feet; and a stingersteered automobile transporter combination not in excess of 75 feet exclusive of a 3 foot front and 4 foot rear overhang.

This new law brings NH into conformity with new Federal regulations. It became effective July 7, 1989.

Regulations

HB 147-FN relative to commercial driver licensing is now Chapter 319. This brings our state's driver licensing laws into conformity with the requirements of the Commercial Vehicle Safety Act of 1986 which:

(1) Permits commercial drivers to hold only one license;
(2) Disqualifies commercial drivers who commit serious traffic violations; and
(3) Strengthens commercial driver licensing and testing standards.

The effective dates for some sections of this Chapter were immediate and the remainder July 1, 1989. This bill was supported by NHMTA.

Chapter 384 (SB106-FN) provides that a new resident applying for a driver's license shall: not receive license until the director of motor vehicles has determined validity of all licenses being surrendered; has secured a certified copy of the motor vehicle records on file in the jurisdiction of licenses being surrendered; and has established a new driver record for the applicant including any previous offenses in another jurisdiction.

Meanwhile, the director may issue a temporary license until he receives the records. Rulemaking and new positions are authorized in the Department of Safety to enforce the new act which was effective July 1, 1989.

Chapter 139 (HB 40) effective January 1, 1990, requires that drivers of all vehicles subject to the motor carrier rules who operate exclusively in intrastate commerce shall be subject to medical examinations, written tests and road tests. The Commissioner of Safety may waive specific requirements of the medical examination for any such driver who has a valid commercial driver's license issued by this state on or after January 1, 1990.

Chapter 325 (HB 104FN) revises laws pertaining to common and contract permits issued by the state. It has new sections on regulation of refuse transporters. They define refuse as property for the purpose of this chapter and require that any person who transports refuse as a common or contract carrier shall be required to meet the provisions of this chapter. However, in its Declaration of Purpose it states "It is intent of this act to insure that certificates on permits issued pursuant to RSA 375B for refuse haulers shall not be for a particular geographic area.

Chapter 300 (SB 50) requires that a transporter of liquid hazardous waste shall be required to accurately determine the amount of hazardous waste being collected from each generator and transported in tank trucks. Such determinations may be made through metering, sticking, weighing or other means approved by the Department of Safety. The transporter shall determine and record the amount of liquid waste on the hazardous waste manifest accompanying the waste shipment. This shall not be construed to apply to transportation or delivery of gasoline or diesel products. Effective July 28, 1989.

Chapter 230 (HB 150-FN) authorizes the imposition of administrative fines for certain oil pollution control offenses and clarifies terminology in oil pollution control laws. It allows fines up to $2,000 for each offense upon any person who violates any provision of this chapter.

Any distributor of oil which includes any truck owner or operator importing oil into the state is assessed a fee of $.006 per gallon of oil imported. The present fee is $.003 per gallon and is deposited is the oil discharge and disposal cleanup fund established under this chapter. Effective July 23, 1989.

Chapter 253 (SB 180) establishes penalties for abandoning vehicles including loss of driver's license and registration and assessment of costs of abandoning a vehicle such as towing and storage costs. The law also relaxes for storage companies rules to dispose of abandoned vehicles. Effective date is July 25, 1989.

Deadline for Access Comments on Twin Trailers Extended

In an effort to accommodate those parties who wanted to have the benefit of the Transportation Research Board's study on "reasonable access" for twin combinations before commenting on the Federal HIghway Administration's access rulemaking; FHWA has extended the deadline for comments to 9/1/89.

Written comments should be sent to FHWA Docket No. 87-1, Room 4232, HCC-10, Office of the Chief Counsel, Federal Highway Administration, 400 7th Street, SW, Washington, DC 20590.

Meet the Qualifications

The exact wording of the Regulations in this section appears in Part 391 of the Federal Motor Carrier Safety Regulations.

KNOW THE DRIVING QUALIFICATIONS

Are you qualified to drive a truck? You must meet all of the Federal requirements listed here.

- You are *21 years* old.
- You can speak, read and write *English* well enough to do your job.
- You can drive your truck *safely.*
- You can tell if your truck is *safely* loaded.
- You know how to *tie down* your cargo.
- You can *pass* the DOT physical exam.
- You have an *up-to-date* driver's license.
- You have *passed* a truck driver's road test.
- You have taken a DOT *written* exam on the drivers' Regulations.
- You have filled out a *detailed* job application form.
- You have a *good* traffic record.

Once a year your boss needs:

a list of *all* traffic violations (except parking). If you had no violations, your boss needs to know that, too.

QUALIFICATIONS: DRIVERS OF LIGHTWEIGHT TRUCKS

If you drive a *lightweight* truck and you are qualified in every other way:

- you can drive if you are *18 years* or older,
- you *don't* need to take a road test, a written exam on these Regulations, or a physical exam, and
- you *don't* need to give your boss information about your past jobs.

DISQUALIFICATIONS

Disqualified? Then you can't drive!

You will be *disqualified* if:

- your right to drive is taken away.

  or
- you are convicted of a crime that you committed while driving a commercial truck.

  or
- you forfeit bond after being charged with a crime you committed while driving a commercial truck.

DISQUALIFYING CRIMES

Look at this list. If you commit any *one* of these crimes, you will be disqualified from driving a truck.

- Driving while you are *high or drunk* on wine, beer or liquor.
- Driving while you are *illegally using* drugs.

- Driving while you are *illegally hauling* drugs.
- *Leaving* the scene of an accident where a person has been hurt or killed.
- Using a truck to commit a *serious* crime, like transporting stolen goods.

First Offenders. A first offender can't drive for *one* year following the date of conviction or forfeit of bond.

Second Offenders. Another offense committed within *three* years after a first offense is a second offense. A second offender *can't* drive for 3 years.

If your license is taken away for *any* reason, tell your boss about it at once.

On June 1, 1987, I wrote to you with news of new DOT regulations. These new rules required drivers to report out-of-state violations to their home state DMV, and to report all violations to their employer. The new DOT rules also described how certain violations would lead to disqualifications. You may recall that one of the issues DOT had left unsettled was the definition of "excessive speeding."

On October 3, 1989, DOT amended and expanded these regulations. They defined "excessive speeding," added improper lane change and following too closely as offenses that may lead to license suspensions, and modified the reporting and disqualification rules as set forth below.

Under the new state commercial driver's license laws, a driver who is convicted of two "serious traffic violations" within three years will be suspended for 60 days. Three such convictions within three years will bring a 120-day suspension. As a result of the new DOT regulations, "serious traffic violations" now include:

- Excessive speeding -- defined as 15 miles per hour or more above the posted speed limit.
- Reckless driving -- as defined by state or local law.
- Improper or erratic traffic lane changes.
- Following the vehicle ahead too closely.
- Any moving violation in connection with a fatal accident, excluding vehicle weight and defect violations.

The above offenses only apply if they occur while operating a commercial motor vehicle (one rated at over 26,000 pounds, designed to carry 16 or more persons, or placarded for hazardous materials).

These 60 or 120-day suspensions are apart from any license action a state may take as a result of points accrued on a license for these and/or other offenses.

Also as a result of this latest DOT rules change:

- Convictions in Canada must be reported to the driver's home state DMV, the same as convictions in other states.
- A commercial driver who is disqualified for life following a second conviction for driving under the influence of alcohol or drugs, or leaving the scene of an accident, may be reinstated after ten years if he/she successfully completed a rehabilitation program that meets the state's standards.

We look at the 15 mph-over-the-speed limit rule for "excessive speeding" as a significant victory. There have been powerful interests involved in this debate that wanted a lower threshold. Some even argued that any speeding by a truck driver should be a "serious traffic violation." However, we had argued against inclusion of improper lane changes and following too closely as serious violations.

If you have any questions about these DOT rules changes, you can contact this office at 202-624-6960.

With best wishes, I am

Fraternally yours,

R. V. Durham

R. V. Durham, Director
Safety and Health Department

RVD:nfb
cc: General President William J. McCarthy

SES[illegible]N: I

SUBJECT: Control Systems

TIME ALLOTTED: 10 Min.

PAGE: 1 - 3

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Define and describe the components of the control system.	1. Proper recognition of	Overhead Transparencies	1. Asking factual and specific questions.
	A. Guages	A. 1.2-37, 1.2-38	
	B. Levers	G. 1.2-22	
	C. Switches		
	D. Using Steering Mechanisms		
	E. Brakes		
	F. Accelerator Pedal		
	G. Clutch Pedal		
			2. Proficiency Test

SESSION I

CONTROL SYSTEMS

Objective

Define and describe the components of the control system.

Topic(s)

Proper recognition of:
A. Gauges
B. Levers
C. Switches
D. Using steering mechanisms
E. Brakes
F. Accelerator Pedal
G. Clutch Pedal

Techniques/Procedures and Activities

Overhead Transparencies:

1.2-37, 1.2-38
1.2-22

2 Lecture:

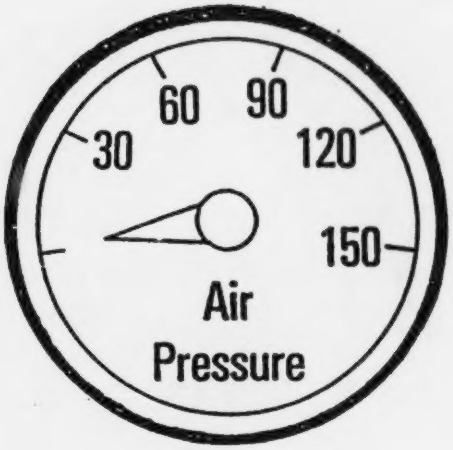
Explanation - the above topics will be covered in depth later in training. Therefore we will cover this quickly for two reasons: 1) drivers already know these topics. 2) these topics will be covered later.

NOTE TO INSTRUCTOR: You need to go over the following terms at some point during this section. They are both mentioned in the tests.

1) Pyrometer - A device that measures exhaust temperatures. DO NOT exceed manufacturer's maximum recommended exhaust temperatures.

2) Tachograph - Refer to section 395.15 of the FMCSR. A tachograph is referred to as an "Automatic On-Board Recording Device". May be used in lieu of log book if it meets the criteria mentioned in section 395.15.

Basic Pressure Gauges


30
60
90
120
150
Air
Pressure

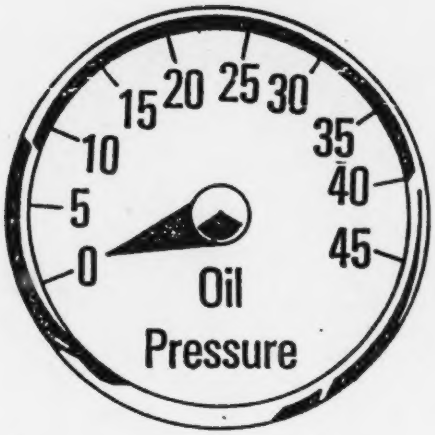
Air Pressure

Normal 95-120

Low 60 STOP!

Low 45-BRAKES COME ON!

Oil Pressure


0
5
10
15
20
25
30
35
40
45
Oil
Pressure

Idling 5-20 PSI

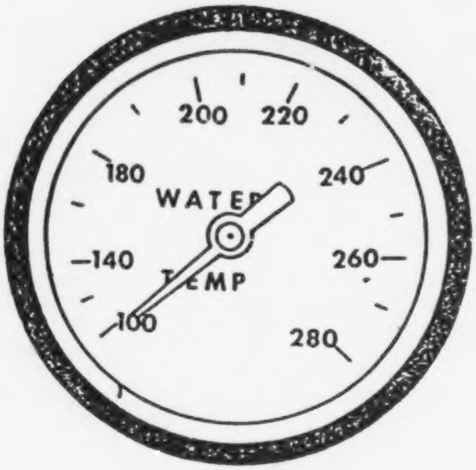
Operating 35-75 PSI

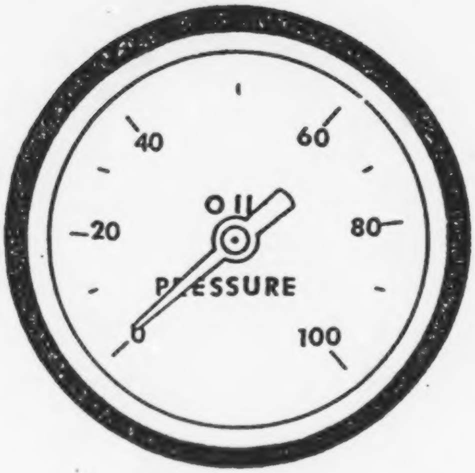
Low, Dropping, Flucuating

STOP! IMMEDIATELY!

Without Oil the Engine Can Be Destroyed Rapidly

Basic Temperature Gauges


100
140
180
200
220
240
260
280
WATER
TEMP


0
20
40
60
80
100
OIL
PRESSURE

Collant Temperature
Normal 170-195

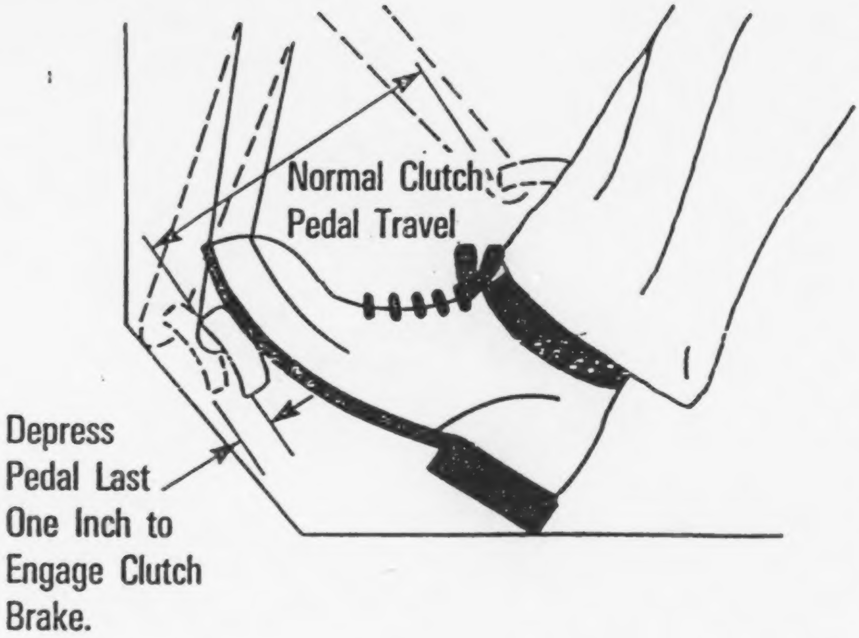
Oil Temperature
180-225
250-265 Loaded

(Depending on Engine Model)

Clutch Brake Operation

- Clutch Brake
  - – Used in Some Nonsynchronized Transmissions
  - – Stops or Slows Down Main Shaft
  - – Aids in Getting in Gear Without Damaging Gears

Operation


Normal Clutch
Pedal Travel
Depress
Pedal Last
One Inch to
Engage Clutch
Brake.

SESSION: I

SUBJECT: Basic Control

TIME ALLOTTED: 20 Min.

PAGE: 1 - 4

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognition of proper procedures for basic control of your vehicle.	1.A. Accelerating	Lecture-Commercial Driver's Manual A.-D. - 2-12, 2-13, 2-14 E. 2-12, 2nd Paragraph	1. Asking factual and specific questions.
	B. Steering		
	C. Shifting Gears		
	D. Braking		
	E. Seat Belt		2. Proficiency Test.

SESSION I

BASIC CONTROL

Objective

Recognition of proper procedures for basic control of your vehicle.

Topic(s)

A. Accelerating
B. Steering
C. Shifting Gears
D. Braking
E. Seat Belt

** INSTUCTORS NOTE
Steering - covered in Pre-trip
Shifting - next in topic I
Braking - control Session III
Seat-belt- law state always are worn in commercial vehicle

Techniques/Procedures and Activities

Lecture: CDLM 2-12, Top 2-13

To drive a vehicle safely, you must be able to control its speed and direction. Safe operation of a commercial vehicle requires skill in:

-- Accelerating
-- Steering
-- Shifting gears
-- Braking

Fasten your seatbelt when on the road. Apply the parking brake when you leave your vehicle.

Don't roll back when you start. You may hit someone behind you. Partly engage the clutch before you take your right foot off the brake. Put on the parking brake whenever necessary to keep from rolling back. Release the parking brake only when you have applied enough engine power to keep from rolling back.

Speed up smoothly and gradually so the vehicle does not jerk. Rough acceleration can cause mechanical damage. When pulling a trailer, rough acceleration can damage the coupling. Speed up very gradually when traction is poor, as in rain or snow. If you use too much power, the drive wheels may spin. You could lose control. If the drive wheels begin to spin, take your foot off the accelerator.

Hold the Wheel Right. Hold the steering wheel firmly with both hands. Your hands should be on opposite sides of the wheel. If you hit a curb or a pothole (chuckhole), the wheel could pull away from your hands unless you have a firm hold. (9-3)

SESSION: I

SUBJECT: Shifting

TIME ALLOTTED: 20 Min.

PAGE: 1 - 5

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognition and proper procedures for shifting gears.	1.A. Manual Transmission	Lecture-Commercial Driver's Manual	1. Asking factual and specific questions.
	B. Automatic Transmission	A.-H. - 2-14, 2-15	
	C. Knowing When To	Overhead Transparencies 1.C-G - 1.5-17	
	D. Shifting Up	1.F. 2.3-31	
	E. Shifting Down		
	F. Special Conditions		
	G. When to Shift Down Before a Hill and When to Shift Down Prior to Entering a Curve		
	H. Use of Retarders		
			2. Proficiency Test.

SESSION I

SHIFTING

Objective

Recognition and proper procedures for shifting gears.

Topic(s)

Overhead Transparencies

1.5-17
2.3-31

Lecture: CDLM 2-14, 2-15

Correct shifting of gears is important. If you can't get your vehicle into the right gear while driving, you will have less control.

Basic Method for Shifting Up. Most heavy vehicles with manual transmissions require double clutching to change gears. This is the basic method:

1. Release accelerator, push in clutch and shift to neutral at the same time.
2. Release clutch.
3. Let engine and gears **slow down** to the RPM required for the next gear (this takes practice).
4. Push in clutch and shift to the higher gear at the same time.
5. Release clutch and press accelerator at the same time.

Shifting gears using double clutching requires practice. If you remain too long in neutral, you may have difficulty putting the vehicle into the next gear. If so, don't try to force it. Return to neutral, release clutch, increase engine speed to match road speed, and try again.

Knowing When to Shift Up. There are two ways of knowing when to shift:

Use engine speed (RPM). Study the driver's manual for your vehicle and learn the operating RPM range. Watch your tachometer, and shift up when your engine reaches the top of the range. (**Some newer vehicles use "progressive" shifting: the RPM** at which you shift becomes higher as you move up in the gears. Find out what's right for the vehicle you will operate.)

Use road speed (mph). Learn what speeds each gear is good for. Then, by using the speedometer, you'll know when to shift up.

With either method, you may learn to use engine sounds to know when to shift.

Basic Procedures for Shifting Down

1. Release accelerator, push in clutch and shift to neutral at the same time.
2. Release clutch.
3. Press accelerator, **increase** engine and gear speed to the RPM required in the lower gear.
4. Push in clutch and shift to lower gear at the same time.
5. Release clutch and press accelerator at the same time.

Downshifting, like upshifting, requires knowing when to shift. Use either the tachometer or the speedometer and downshift at the right RPM or road speed.

Special conditions where you should downshift are:

Before starting down a hill. Slow down and shift down to a speed that you can control without using the brakes hard. Otherwise the brakes can overheat and lose their braking power. **Downshift before starting down the hill. Make sure you are in a low enough gear,** usually lower than the gear required to climb the same hill.

Before entering a curve. Slow down to a safe speed, and **downshift to the right gear** before entering the curve. This lets you use some power through the curve to help the vehicle be more stable while turning. It also lets you speed up as soon as you are out of the curve.

Multi-speed rear axles and auxiliary transmissions are used on many vehicles to provide extra gears. You usually control them by a selector knob or switch on the gearshift lever of the main transmission. There are many different shift patterns. Learn the right way to shift gears in the vehicle you will drive.

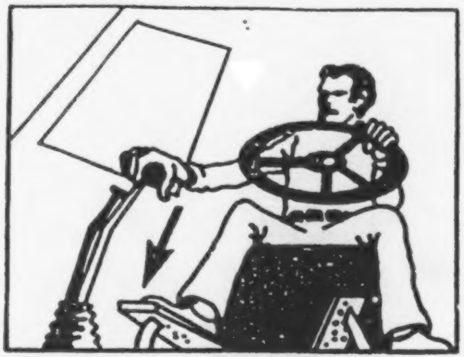
Some vehicles have automatic transmissions. You can select a low range to get greater engine braking when going down grades. The lower ranges prevent the transmission from shifting up beyond the selected gear (unless the governor RPM is exceeded). It is very important to use this braking effect when going down grades.

Some vehicles have "retarders". Retarders help slow a vehicle, reducing the need for using your brakes. They **reduce brake wear** and give you another way to slow down. There are many types of retarders (**exhaust, engine, hydraulic, electric**). All retarders can be turned on or off by the driver. On some the retarding power can be adjusted. When turned "on", retarders apply their braking power (to the drive wheels only) whenever you let up on the accelerator pedal all the way.

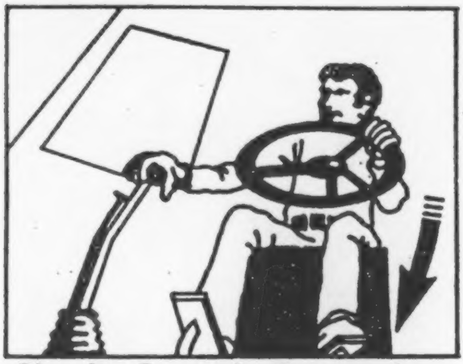
Caution. When your drive wheels have poor traction, the **retarder may cause them to skid. Therefore you should turn the retarder** off whenever the road is wet, icy or snow covered.

Visual 1

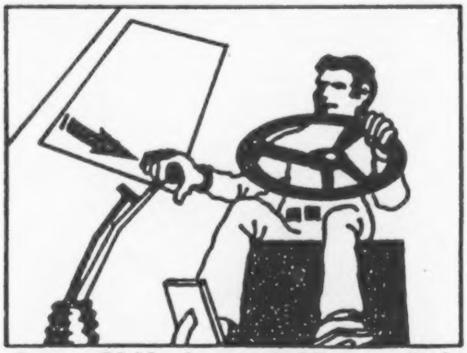
Key Elements of Shifting



Accelerator—Controls Fuel to Engine



Clutch—Controls Connection Between Engine and Transmission



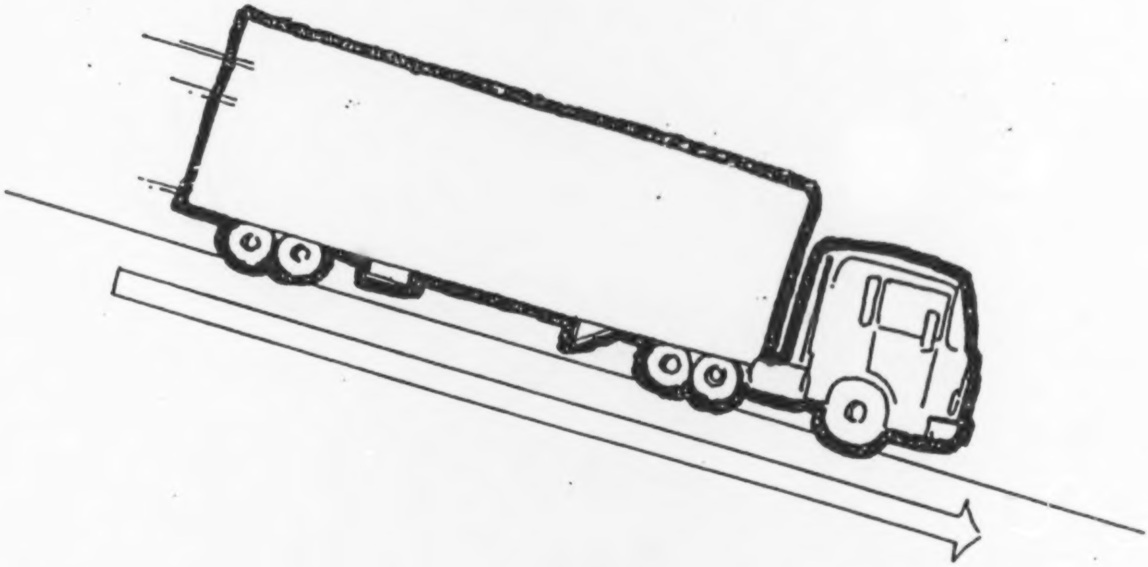
Gear Shift Lever—Allows Driver to Select Gears in Transmission

- Match Engine Speed (RPM) to Transmission Speed
- Shift Smoothly to Avoid Clashing Gears
- Shift by the Tachometer
  - –Upshift When Engine RPMs Approach Top of Governed Speed
  - –Avoid Overspeeding
  - –Downshift When Engine Speed Approaches Low Range of Governed Speed
  - –Avoid Lugging
- Variety of RPM/Gear Shift Patterns
- Learn RPM/Shift Pattern of Vehicle You Drive!

Visual 9

Handling Downgrades

- Start Down in Low Enough Gear
- Complete Shift Before Starting Down
- Maintain Light Brake Pressure
- Brake Only to Keep Engine Speed Within Safe Operating Range
- Use Engine Exhaust Brakes if Possible
- Watch Air Pressure



76 ✓

SESS . I

SUBJECT: Backing

TIME ALLOTTED: 20 Min.

PAGE: 1 - 6

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognize the proper procedures and methods for backing.	1.A. Backing with Trailer 1.B. Backing Safely 1.C. Using a Helper	1. Lecture - Commercial Driver's Manual A.-C. - 2-13	1. Asking factual and specific questions.
		2. Overhead Transparencies A. 1.6-13, 1.6-14 B. 1.6-13, 1.6-14 C. 1.6-13, 1.6-14	2. Proficiency Test

SESSION I

BACKING

Objective

Recognize the proper procedures and methods for backing.

Topic(s)

1. Backing with Trailer.
2. Backing Safely.
3. Using a Helper.

Techniques/Procedures and Activites

Overhead Transparencies
1.6-13 -14

Lecture: CDLM 2-13

Backing with a Trailer. When backing a car, straight truck or bus you turn the top of the steering wheel toward the direction you want to go. When backing a trailer, you turn the steering wheel in the opposite direction. Once the trailer starts to turn, you must turn the wheel the other way to follow the trailer.

Whenever you back with a trailer, try to position your vehicle so you can back in a straight line. If you must back on a curved path, back to the driver's side so you can see.

Back slowly. This will let you make corrections before you get too far off course.

Use the mirrors. The mirrors will help you see whether the trailer is drifting to one side or the other.

Correct drift immediately. As soon as you see the trailer getting off the proper path, correct it by turning the top of the steering wheel in the direction of the drift.

Pull forward. When backing a trailer, make pull-ups to reposition your vehicle as needed.

Because you cannot see everything behind your vehicle, **backing is always dangerous.** Avoid backing whenever you can. When you park, try to park so you will be able to pull forward when you leave. When you have to back, here are a few simple safety rules:
-- Look at your path.
-- Back slowly.
-- Back and turn toward the driver's side whenever possible.
-- Use a helper whenever possible.

These rules are discussed in turn below.

Look at Your Path. Look at your line of travel **before** you begin. Get out and walk around the vehicle. Check your clearance to the sides and overhead in and near the path your vehicle will take.

Back Slowly. Always back as slowly as possible. Use the lowest reverse gear. That way you can more easily correct any steering errors. You also can stop quickly if necessary.

Back and Turn toward the Driver´s Side. Back to the driver´s side so you can see better. Backing toward the right side is very dangerous because you can´t see as well. If you back and turn toward the driver´s side, you can watch the rear of your vehicle by looking out the side window. Use driver-side backing -- even if it means going around the block to put your vehicle in this position. The added safety is worth it.

Use a Helper. Use a helper when you can. There are blind spots you can´t see. That´s why a helper is important.

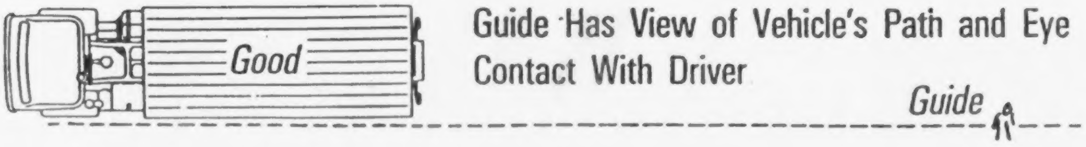
The helper should stand near the back of your vehicle where you can see the helper. Before you begin backing, work out a set of hand signals that you both understand. Agree on a signal for "stop".

Visual 3

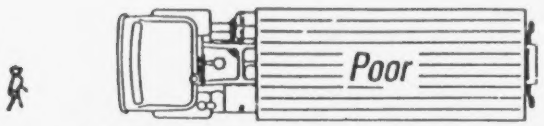
Rules for Safe Backing

- Avoid Backing When Possible
- Check Clearances Before Starting
- Use Helper When Possible
- Use Horn and Flashers
- Keep Window Open and Radio Off
- Start in Proper Position
- Back Slowly
- Constantly Check Behind
- Start Over When Necessary

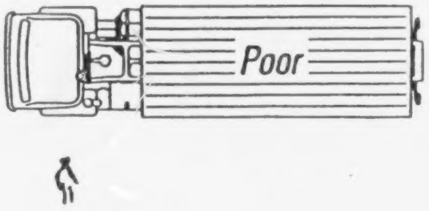
Use of Helper or Guide



Guide Has View of Vehicle's Path and Eye Contact With Driver

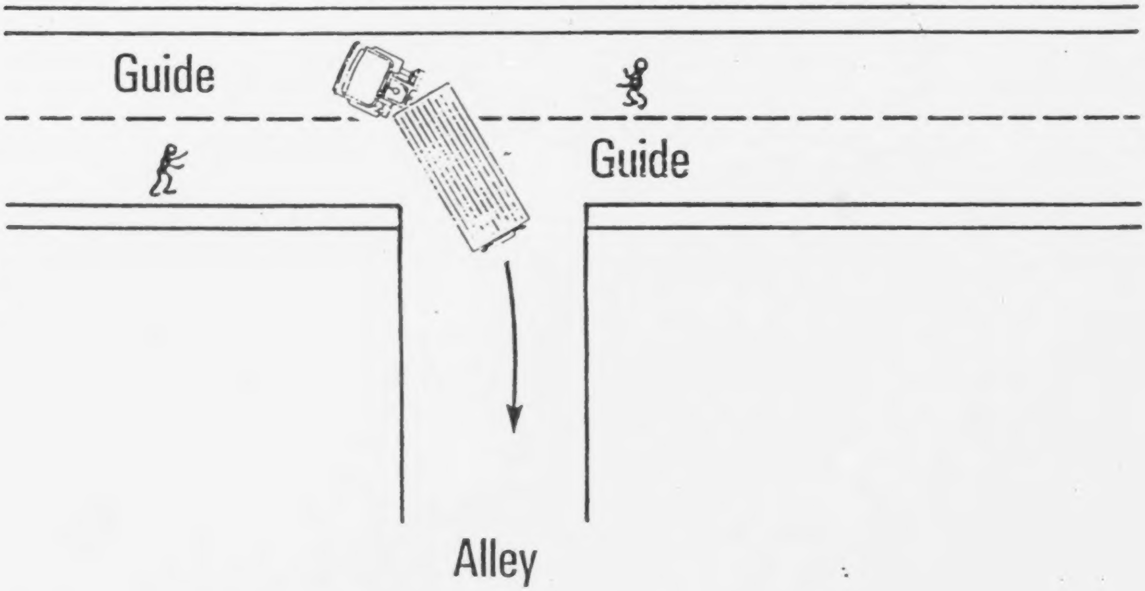


Guide Has No View of Vehicle's Path.



Truck Backing Across Street

- Illegal but Sometimes Necessary
- Maneuver Vehicle to Back From Sight Side
  - If Necessary, Drive a Block and Turn Around to Avoid Blind Side Backing
- Use a Helper
- Safer to Block Off Entire Street Than Part of Street
  - Vehicles Won't Be Tempted to Go Around You
- Driver Is Responsible for Any Accidents!



1-16

SESS : I

SUB : Speed Management

IME ALLOTTED: 35 Min.

PAGE: 1 - 7

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
. To recognize the principles of speed management in relationship to driving conditions.	1. Speed and stopping distance A. Perception distance B. Reaction distance C. Braking D. Total stopping distance	1. Lecture - Commercial Driver's Manual A.-D. - 2-16, 2-20, 2-21 2-22 Overhead Transparencies 1.A. 2.3-23, 2.3-24 B. 2.3-25, 2.3-26 C. D. 2.3-26 2.6-35	1. Asking factual and specific questions.
. To recognize the principles of speed management relative to stopping distance.	2. Matching speed with the road conditions A. Shaded areas B. Bridges C. Melting ice D. Black ice E. Vehicle icing F. Beginning rain G. Hydroplaning H. The effects of vehicle weight on the stopping distance I. Speed and curves J. Speed and distance ahead K. Speed and traffic flow L. Speed on downgrades	2. Lecture - Commercial Driver's Manual A.-L. - 2-21, 2-22	2. Proficiency Test.

SESSION I

SPEED MANAGEMENT

Objective

To recognize the principles of speed management in relationship to driving conditions.

Topic(s)

Speed and stopping distance.

1. Perception distance.
2. Reaction distance.
3. Braking.
4. Total stopping distance.

Techniques/Procedures and Activities

Overhead Transparencies
2.3-23
2.3-24
2.3-25
2.3-26
2.6-35

Lecture: CDLM 2-16, 2-20, 2-21, 2-22

To be a safe driver you need to know what's going on all around your vehicle. Not looking properly is a major cause of accidents.

All drivers look ahead; but many don't look **far enough** ahead.

Importance of Looking Far Enough Ahead. Because stopping or changing lanes can take a lot of distance, knowing what the traffic is doing on all sides of you is very important. You need to look well ahead to make sure you have room to make these moves safely.

How Far Ahead to Look. Most good drivers look **12 to 15 seconds** ahead. That means looking ahead the distance you will travel in **12 to 15 seconds.** At lower speeds, that's about one block. At highway speeds it's about a quarter of a mile. If you're not looking that far ahead, you may have to stop too quickly to make quick lane changes. Looking 12 to 15 seconds ahead doesn't mean not paying attention to things that are closer. Good drivers shift their attention back and forth, near and far.

Look for Traffic. Look for vehicles coming onto the highway or into your lane or turning. Watch for brakelights from slowing vehicles. By seeing these things far enough ahead, you can change your speed or change lanes if necessary to avoid a problem.

Look for Road Conditions. Look for hills and curves - anything you'll have to slow or change lanes for. Pay attention to traffic signals and signs. If a light has been green for a long time, it will probably change before you get there. Start slowing down and be ready to stop. **Traffic signs may alert you to road conditions where you may have to change speed.**

It's important to know what's going on behind and to the sides. Check your mirrors regularly. Check more often in special situations.

Regular Checks. You need to make regular checks of your mirrors to be aware of traffic and to check your vehicle.

Traffic. Check the mirrors for vehicles on either side and in back of you. In an emergency, you may need to know whether you can make a quick lane change. Use your mirrors to spot overtaking vehicles. There are "blind spots" that your mirrors cannot show you. Check your mirrors regularly to know where other vehicles are around you, and to see if they move into your blind spots.

Check your vehicle. Use the mirrors to keep an eye on your tires. It's one way to spot a tire fire. If you're carrying open cargo, you can use the mirrors to check it. Look for loose straps, ropes or chains. Watch for a flapping or ballooning tarp.

Special Situations. Special situations require more than regular mirror checks. These are lane change, turns, merges, and right maneuvers.

Lane changes. You need to check your mirror to make sure no one is alongside you or about to pass you. Check you mirrors:

-- Before you change lanes to make sure there is enough room.
-- After you have signaled, to check that no one has moved out of your blind spot.
-- Right after you start the lane change to double-check that your path is clear.
-- After you complete the lane change.

Turns. In turns, check your mirrors to make sure the rear of your vehicle will not hit anything.

Merges. When merging, use your mirrors to make sure the gap in traffic is large enough for you to enter safely.
Tight Maneuvers. Any time you are driving in close quarters check your mirrors often. Make sure you have enough clearance.

How to Use Mirrors. Use mirrors correctly by checking them quickly and understanding what you see.

Checking quickly. When you use your mirrors while driving on the road, check quickly. Look back and forth between the mirrors and the road ahead. Don't focus on the mirrors for too long. Otherwise, you will travel quite a distance without knowing what's happening ahead.

Understanding what you see. Many large vehicles have curved (convex, "fisheye", "spot", "bugeye") mirrors that show a wider area than flat mirrors. This is often helpful. But everything appears smaller in a convex mirror than it would if you were looking at it directly. Things also seem farther away than they really are. It´s important to realize this and to allow for it.

Driving too fast is a major cause of fatal crashes. You must adjust your speed depending on driving conditions. These include traction, curves, visibility, traffic, and hills.

There are three things that add up to total stopping distance:

Perception Distance
+ Reaction Distance
+ Braking Distance
= Total Stopping Distance

Perception distance. This is the distance your vehicle travels from the time your eyes see a hazard until your brain recognizes it. The perception time for an alert driver is about 3/4 second. At 55 mph, you travel 60 feet in 3/4 second.

Reaction distance. The distance traveled from the time your brain tells your foot to move from the accelerator until your foot is actually pushing the brake pedal. The average driver has a reaction time of 3/4 second. This accounts for an additional 60 feet traveled at 55 mph.

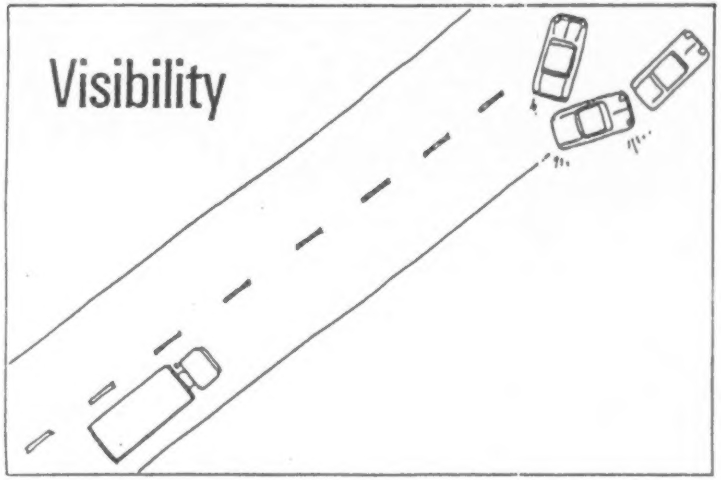
Braking distance. The distance it takes to stop once the brakes are put on. At 55 mph on dry pavement with good brakes it can take a heavy vehicle about 170 feet to stop. It takes about 4 1/2 seconds.

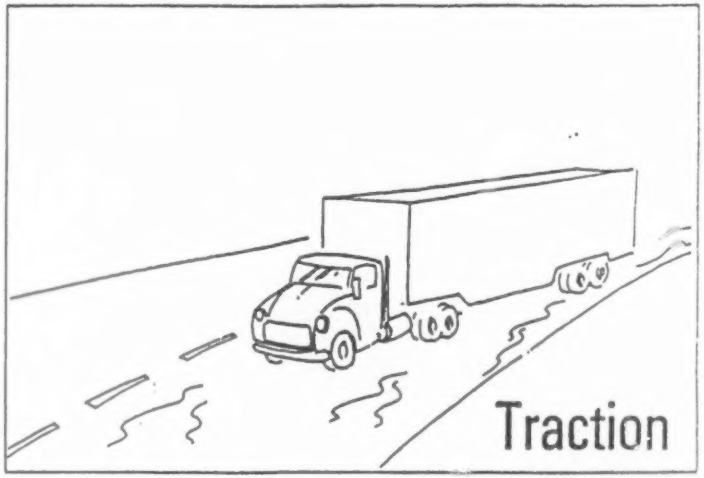
Total stopping distance. At 55 mph it will take about 6 seconds to stop and your vehicle will travel about the distance of a football field. (60 + 60 + 170 = 290 feet).

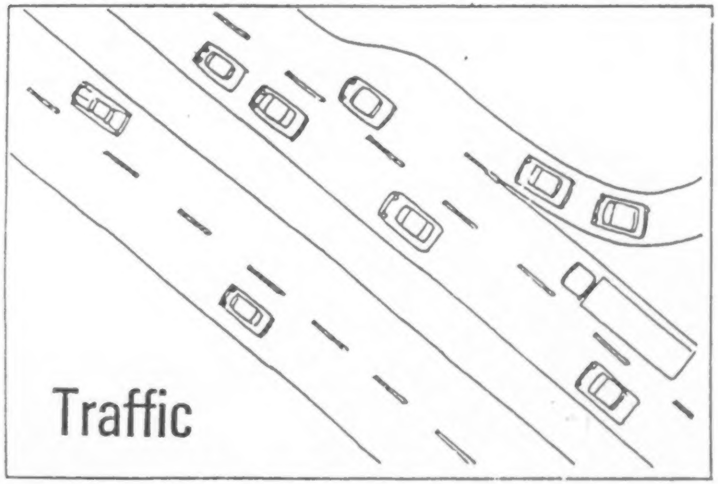
The effect of speed on stopping distance. Whenever you double your speed, it takes about **four** times the destructive power if it crashes. High speeds increase stopping distances greatly. By slowing down a little, you can gain a lot in reduced braking distance.

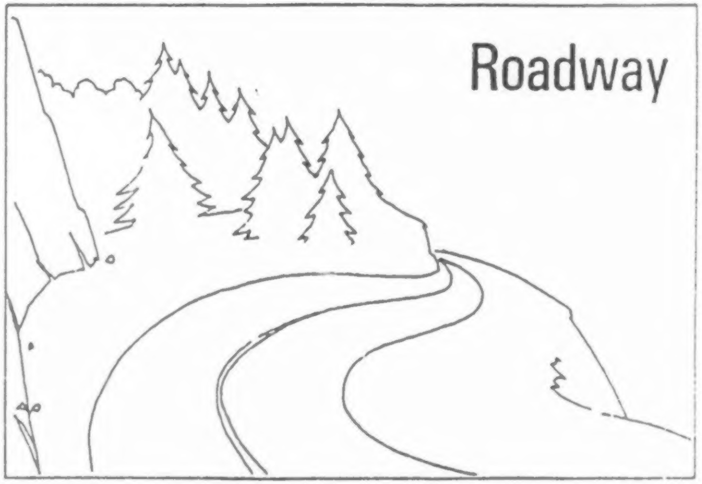
The effect of vehicle weight on stopping distance. The heavier the vehicle, the more work the brakes must do to stop it and the more heat they absorb. But the brakes, tires, springs, and shock absorbers on heavy vehicles are designed to work best when the vehicle is fully loaded. ***Empty** trucks require **greater** stopping distances, because an empty vehicle has less traction. It can bounce and lock up its wheels, giving much poorer braking. (This is not usually the case with buses.)

Adjust Speed For . . .


Visibility







Braking Distance

MPH	Distance For Cars	Distance For Tractor-Trailers
20	25	50
30	55	115
40	105	205
50	188	320
60	300	465

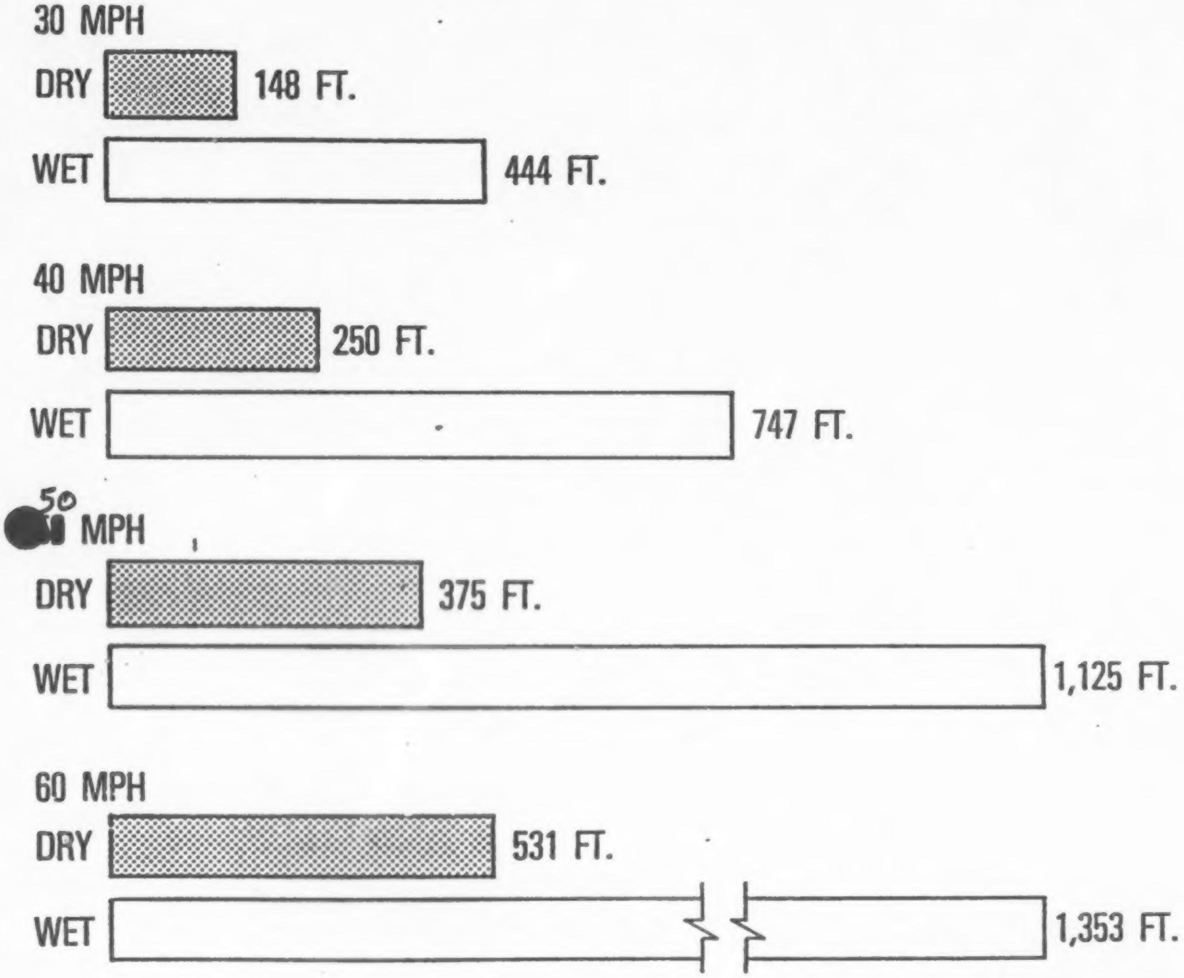
Visual 3

Response Time and Distance Traveled

Miles Per Hour	Feet Per Second	Response Distance	Braking Distance	Total Stopping Distance
20	29	22	50	72
30	44	33	115	148
40	59	44	205	249
50	73	55	320	375
60	88	66	465	531

Visual 4

Stopping Distances Wet Vs Dry Pavements



Wet-Road—Cut Speed in Half to Stop in Same Number of Feet as on Dry Road.

Checklist for Operating on Slippery Surfaces

Trip Time on Icy Road Will Take Longer

- Start Gently
- Adjust Turning and Braking to Conditions
- Check Mirrors
- Adjust Speed to Conditions
- Adjust Space to Conditions
- Avoid Wet Brakes

SESSION I

SPEED MANAGEMENT

Objective

To recognize the principles of speed management relative to stopping distance.

Topic(s)

Matching speed with the road conditions:

1. Shaded areas.
2. Bridges.
3. Melting ice.
4. Black ice.
5. Vehicle icing.
6. Beginning rain.
7. Hydroplaning.
8. the effects of vehicle weight on the stopping distance.
9. Speed and curves.
10. Speed and distance ahead.
11. Speed and traffic flow.
12. Speed on downgrades.

Techniques/Procedures and Activities

Overhead Transparencies
    2.3-27
    2.6-35

Lecture: 2-21-, 2-22

Slippery Surfaces It will take longer to stop and it will be harder to turn without skidding when the road is slippery. You must drive slower to be able to stop in the same distance as on a dry road. Wet roads can double stopping distance. Reduce speed by about one third (e.g., slow from 55 to about 35 mph) on a wet road. On packed snow, reduce speed by a half, or more. If the surface is icy, reduce speed to a crawl and stop driving as soon as you can safely do so.

Identifying Slippery Surfaces. Sometimes it's hard to know if the road is slippery. Here are some signs of slippery roads.

Shaded areas. Shady parts of the road will remain icy and slippery long after open areas have melted.

Bridges. When the temperature drops, bridges will freeze before the road will. Be especially careful when the temperature is close to 32 degrees F.

Melting ice. Slight melting will make ice wet. Wet ice is much more slippery than ice that is not wet.

Black ice. Black ice is a thin layer that is clear enough that you can see the road underneath it. It makes the road look wet. Any time the temperature is below freezing and the road looks wet, watch out for black ice.

Vehicle icing. An easy way to check for ice is to open the window and feel the front of the mirror, mirror support, or antenna. If there's ice on these, the road surface is probably starting to ice up.

Just after rain begins. Right after it starts to rain, the water mixes with oil left on the road by vehicles. This makes the road very slippery. If the rain continues, it will wash the oil away.

Hydroplaning. In some weather, water or slush collects on the road. When this happens, your vehicle can hydroplane. It's like water skiing: the tires lose their contact with the road and have little or no traction. You may not be able to steer or brake. You can regain control by releasing the accelerator and pushing in the clutch. This will slow your vehicle and let the wheels turn freely. If the vehicle is hydroplaning, do not use the brakes to slow down. If the drive wheels start to skid, push in the clutch to let them turn freely.

It does not take a lot of water to cause hydroplaning. Hydroplaning can occur at speeds as low as 30 mph if there is a lot of water. Hydroplaning is more likely if tire pressure is low or the tread is worn. (The grooves in a tire carry away the water; if they aren't deep they don't work well.) Be especially careful driving through puddles. The water is often deep enough to cause hydroplaning.

Drivers must adjust their speed for curves in the road. If you take a curve too fast, two things can happen. The wheels can lose their traction and continue straight ahead, so you skid off the road. Or, the wheels may keep their traction and the vehicle rolls over. Tests have shown that trucks with a high center of gravity can roll over at the posted speed limit for a curve.

Slow to a safe speed **before** you enter a curve. Braking in a curve is dangerous because it is easier to lock the wheels and cause a skid. Slow down as needed. Don't ever exceed the posted speed limit for the curve. Be in a gear that will let you accelerate slightly in the curve. This will help you keep control.

You should always be able to stop within the distance you can see ahead. Fog, rain or other conditions may require that you slow down to be able to stop in the distance you can see. At night, you can't see as far with low beams as you can with high beams. When you must use low beams, slow down.

When you're driving in heavy traffic, the safest speed is the speed of other vehicles. Vehicles going the same direction at the same speed are not likely to run into one another. Drive at the speed of the traffic, if you can without going at an illegal or unsafe speed. Keep a safe following distance.

The main reason drivers exceed speed limits is to save time. But anyone trying to drive faster than the speed of traffic will not be able to save much time. The risks involved are not worth it. If you go faster than the speed of other traffic:

-- You'll have to keep passing other vehicles. This increases the chance of a crash.
-- It is more tiring. Fatigue increases the chance of a crash.

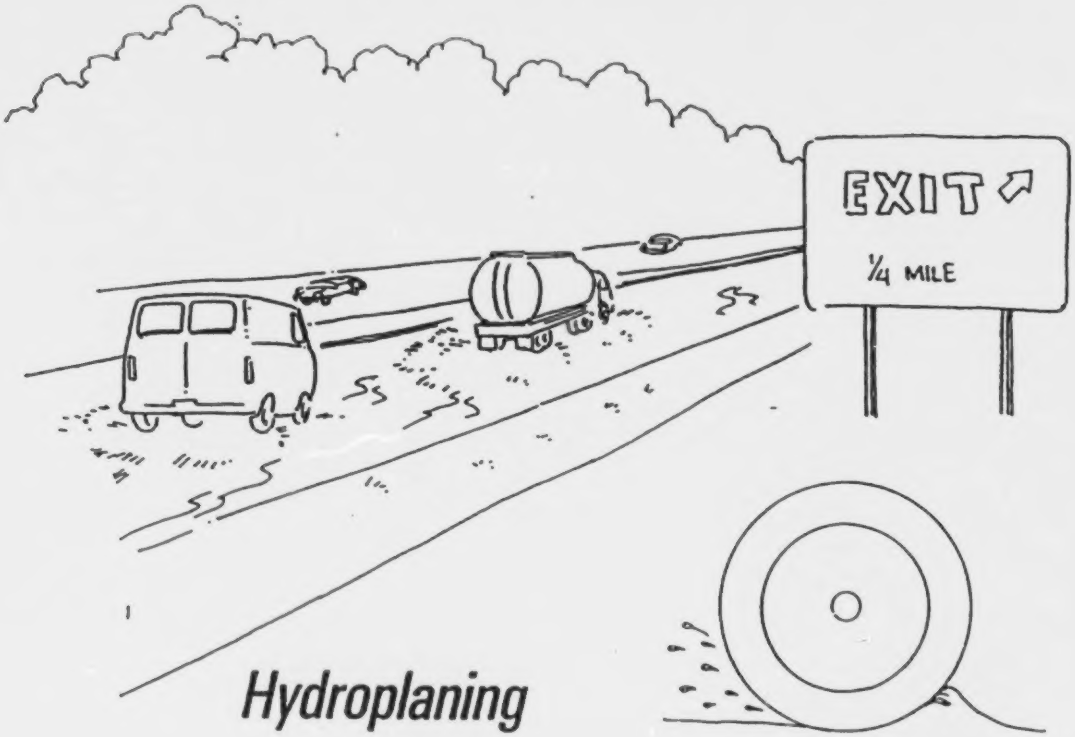
Going with the flow of traffic is safer, and easier.

Going **slow** is the most important thing in going down long steep hills safely. If you do not go slowly enough, your brakes can become so hot they won't slow you down. Shift your transmission to a low gear **before** starting down the grade. Pay attention to signs warning of long downhill grades, and check your brakes before starting down the hill. Use a light, steady pressure on the brake pedal.

Going down steep hills is discussed more in "Mountain Driving". Read that section carefully.

Visual 5

Dynamics of Hydroplaning



Hydroplaning

- Tires Not Touching Road

Steps

- Gradually Decelerate
- Don't Brake
- Don't Turn Wheel

Checklist for Operating on Slippery Surfaces

Trip Time on Icy Road Will Take Longer

- Start Gently
- Adjust Turning and Braking to Conditions
- Check Mirrors
- Adjust Speed to Conditions
- Adjust Space to Conditions
- Avoid Wet Brakes

INSTRUCTORS NOTE RE:

1) CHECK STUDENTS FOR ATTENTIVENESS

2) MAY BE A GOOD TIME FOR A SHORT BREAK

S[illegible]ION: I

SUBJECT: Test Taking Skills

TIME ALLOTTED: 45 Min.

PAGE: 1 - 8

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Define reason for test taking component.	1. Introduction to test taking skills.	1.A. Lecture Pg. 96 - Test-Wiseness Manual 1.B. Overhead Transparency Pg. 96 - Test-Wiseness Manual	1. Asking factual and specific questions.
2. Understanding content of test taking component.	2. Outline of content by Session.	2. Overhead Transparencies Content outline	2. Proficiency Test.
3. Define strategies for test taking.	3.A. General test taking strategies.	3.A. Lecture - Text of Manual	
	3.B. Tip list for student.	3.B. Overhead Transparencies	
		3.C. Handouts	
4. Understanding of time use.	4. Use of time allotted.	4. Lecture - Text of Manual	
5. Understanding the directions on a test.	5. Following the directions in test taking.		

SESSION 1

LESSON 8.1 Introduction to Test Taking Skills
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To define the reason for test taking component.

Materials

Instructional Aids: Overheads (2)

Student Materials:

Instructor Materials: Text of Introduction to Test Taking.

Content

Activity or Topic Approximate Time

Lecture on the elements to be mastered for scoring well on tests.

This section of our classes focuses on the third factor, skill in the mechanics of test taking. The bulk of the training focuses on the first factor and the second factor is essentially left up to the students. However, when a student possesses knowledge and has good physical and emotional health, skill in the mechanics of test taking can make the difference between mediocre and outstanding test performance.

THE SCORE A STUDENT ACHIEVES ON A TEST MAY BE INFLUENCED BY SEVERAL FACTORS:

1. KNOWLEDGE OF THE SUBJECT MATTER
2. POSSESSION OF GOOD PHYSICAL AND EMOTIONAL HEALTH
3. SKILL IN THE MECHANICS OF TEST TAKING

SESSION I

1. Introduction to test taking skills.

2. Content of test taking skills Session I.

3. Strategies for test taking.

4. Understanding the importance of use of time.

5. Understanding the directions on a test.

SESSION I

LESSON 8.3 Strategies for Test Taking
Title

Overview

Time Allotted:

Prerequisites:

Purpose: Define the strategies for test taking.

Materials

Instructional Aids: Overheads and Handouts
Page 165.

Student Materials: Handouts

Instructor Materials:
Visual A. How To Be A Master Test Taker
Visual B. Tip List For Students

Content

Activity or Topic	Approximate Time
Discussion of strategies. Short explanations and question and answer opportunity.	

GENERAL TEST-TAKING STRATEGIES

A. TIME-USING STRATEGIES

1. Set up a schedule for progressing through the test.
2. Work as rapidly as possible with reasonable assurance of accuracy.
3. Answer the easiest questions first.
4. On scrap paper, keep a record of the items to which you would like to go back.
5. Use time remaining after completion of the test to go back and look at your answers.

B. ERROR-AVOIDANCE STRATEGIES

1. Pay careful attention to directions. Determine the nature of the task.
2. Determine the nature of the question.
3. Ask the examiner for clarification, when necessary, if it is permitted.
4. If you are using a separate answer sheet, make sure to record the answer in the correct position on the sheet.

C. GUESSING STRATEGY

Don't make wild guesses. Many times you can get the correct answer by a process of reasoning and eliminating wrong answers.

D. MISCELLANEOUS TIPS

1. Only change an answer if you are sure the first one you picked was wrong.
2. Examine carefully all possible responses before attempting to choose the correct answer.
3. Use relevant content information provided in other test items.
4. Tackle items one at a time rather than thinking about the whole test.
5. Do not expect to find a pattern in the positions of the correct choices.

HOW TO BE A MASTER TEST TAKER

- APPROACH THE TEST CONFIDENTLY. BE CALM.
- ARRIVE ON TIME.
- GET COMFORTABLE AND RELAX.
- HAVE ALL MATERIALS YOU NEED.
- LISTEN CAREFULLY TO ALL DIRECTIONS.
- READ ALL DIRECTIONS. READ THEM TWICE IF NECESSARY.
- LOOK OVER THE COMPLETE PAGE BEFORE ANSWERING ANY QUESTIONS.
- CAREFULLY READ EACH QUESTION. MAKE SURE YOU UNDERSTAND EACH ONE BEFORE YOU ANSWER. REREAD IF NECESSARY.
- THINK! AVOID HURRIED ANSWERS.
- GET ALL THE HELP YOU CAN FROM "CUE" WORDS.
- STAY CALM AND CONFIDENT THROUGHOUT THE TEST. DON'T LET ANYTHING THROW YOU.
- CHECK AND PROOFREAD YOUR ANSWERS. BE A BITTER-ENDER. CONTINUE WORKING UNTIL IT IS TIME TO GO.

TIP LIST FOR STUDENTS

Here are some very helpful test taking tips about

- getting ready physically and mentally,
- making the best use of your time,
- making fewer mistakes and
- more!

Getting ready... physically and mentally

Get plenty of sleep the night before the test. "Cramming" won't help.

Don't take a test when you are hungry. Eat your breakfast or lunch.

Be on time and be alert.

Put everything else out of your mind [illegible] think only of doing your best.

Dress comfortably.

If you wear glasses, be sure you have them and wear them!

Making the best use of your time

If the test is timed, don't rush, but don't dally either.

Answer the easy questions first.

If you're stumped by a question, go on with the test and come back to it later.

Make a note on scratch paper of the questions you want to go back to so you can find them easily.

[illegible] you finish early, look over your answers.

Making fewer mistakes

Read all directions. Understand what you're supposed to do.

Ask the person giving the test for help if you don't understand the directions.

Carefully read questions and ALL of the answer choices.

Try to eliminate some of the answer choices as wrong; this increases your chances of selecting the correct answer.

Miscellaneous tips

Don't panic! Tackle questions one at a time rather than thinking about the whole test at once.

Use relevant content information from other test questions where possible.

Don't "score" your answers as you take the test.

Trust your first answer; change an answer only if you feel you must.

Remember, there is usually no pattern of correct answer choices.

SESSION I

LESSON 8.4 Using Time Wisely
Title

Overview

Time Allotted:

Prerequisites:

Purpose: Understanding of time use.

Materials

Instructional Aids: Overhead

Student Materials:

Instructor Materials:

Content

Activity or Topic	Approximate Time
Lecture on specific material on overhead. Stress that there is no time limit on this test.	

Making the Best Use of Your Time

1. If the test is timed, don't rush, but don't dally either.
2. Answer the easy questions first.
3. If you're stumped by a question, go on with the test and come back to it later.
4. Make a note on scratch paper of the questions you want to go back to so you can find them easily.
5. When you finish, look over your answers.

SESSION I

LESSON 8.5 Correctly following the directions on the CDL
Title

Overview

Time Allotted:

Prerequisites:

Purpose: Explain the directions for the CDL.

Materials

Instructional Aids: Overhead (Directions from CDL test.)

Student Materials: Handouts

Instructor Materials:

Content

Activity or Topic	Approximate Time
Lecture: Inform the students on the directions.	

NOTE: TAKE TEST THEN INSTRUCTOR AND STUDENTS HAVE DISCUSSION ON TEST CONTENT

FOLLOWING DIRECTIONS

SITUATION

> You received a failing mark on a reading test. After reviewing your answers with the teacher, you realized that you had not completely understood the directions. What is your new attitude toward reading directions?

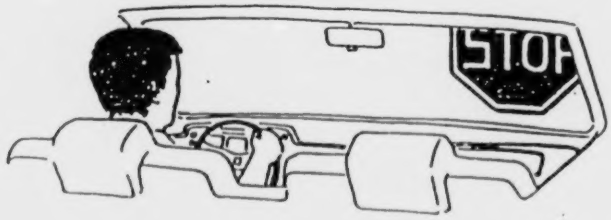
DIRECTIONS: Circle the letter which matches the answer you choose.

1. You are tested so often that reading directions
   A. is unnecessary.
   B. is only for the slower students.
   C. takes up valuable time.
   [✓ D.] is clearly a necessary part of testing.

2. If directions are not clearly understood you should
   A. guess.
   [✓ B.] ask the teacher.
   C. avoid admitting it to others.
   D. tell the teacher after the test.

3. In order to work as fast as possible you should
   A. start the test before reading the directions.
   [✓ B.] read the directions before starting the test.
   C. read the directions when you're finished.
   D. avoid asking questions about the directions.

4. Reading the directions to each part of the test is
   [✓ A.] necessary.
   B. unnecessary.
   C. seldom important.
   D. often confusing.



INSTRUCTIONS

Do not start the test until you have read all instructions.

This is a test of the knowledge required.

Read each question. Make sure that you read all the possible answers. Decide which answer is best. There is only one best answer for each question. Then mark that answer on your answer sheet by blackening in the circle with the letter for that answer. You are not to make any marks on the test booklet.

Look at the EXAMPLE box at the top of the answer sheet. It shows how to mark your answers. You must blacken in completely the circle for the answer that you wish to mark. You may change an answer if you wish, but be sure that you completely erase the old answer.

Remember, do not mark more than one answer. If you mark more than one answer to a question, it will be graded as a wrong answer.

If you do not know the answer to a question, you should guess. You should answer all questions on the test.

This test is not timed. You will have as long to work on it as you wish.

You may begin whenever you are ready. If you have any questions either now or as you work through the test, raise your hand.

SESSION: I

SUBJECT: Proficiency Test

TIME ALLOTTED: 40 Min.

PAGE: 1 - 9

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
Knowledge of student material covered in this Session.	37 questions.	Test question Answer Sheet	80% passage min. (Allowed 8 questions wrong for 80%)

INSTRUCTORS NOTE:

Please observe average length of time for completion of test. Then devide # of Questions into average # of of minutes. This figure will become more important in Session II, III, IV.
2) Instructor must also leave enough time in the following Sessions for discussion of test answers.

SESSION I II III IV
(Circle Session Number)

Answer Sheet

Name: ____________________ Date: ____________________

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
1[illegible] B C D
11. A B C D
12. A B C D
13. A B C D
14. A B C D
15. A B C D
16. A B C D
17. A B C D
18. A B C D
19. A B C D
20. A B C D
21. A B C D
22. A B C D
23. A B C D
24. A B C D
25. A B C D
26. A B C D
27. A B C D
28. A B C D
29. A B C D
30. A B C D
31. A B C D
32. A B C D
33. A B C D
34. A B C D
35. A B C D
36. A B C D
37. A B C D
38. A B C D
39. A B C D
40. A B C D
41. A B C D
42. A B C D
43. A B C D
44. A B C D
45. A B C D
46. A B C D
47. A B C D
48. A B C D
49. A B C D
50. A B C D
51. A B C D
52. A B C D
53. A B C D
54. A B C D
55. A B C D
56. A B C D
57. A B C D
58. A B C D
59. A B C D
60. A B C D
61. A B C D
62. A B C D
63. A B C D
64. A B C D
65. A B C D
66. A B C D
67. A B C D
68. A B C D
69. A B C D
70. A B C D
71. A B C D
72. A B C D
73. A B C D
74. A B C D
75. A B C D
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87. A B C D
88. A B C D
89. A B C D
90. A B C D
91. A B C D
92. A B C D
93. A B C D
94. A B C D
95. A B C D
96. A B C D
97. A B C D
98. A B C D
99. A B C D
100. A B C D
101. A B C D
102. A B C D
103. A B C D

Revised 09/20/89
Revised 10/13/89
Revised 06/11/90
Final

SESSION I

Test 1

Name: ______________________________

___ 1. The length limit for any single motor vehicle, except for auxiliary parts, is:
a) 40 feet
b) 45 feet
c) 50 feet
d) 60 feet

___ 2. Medical certificates must be renewed every:
a) year
b) two years
c) four years
d) three years

___ 3. For an average driver, driving 55 mph on dry pavement, it will take about ___ to bring the vehicle to a stop:
a) twice the length of the vehicle
b) half the length of a football field
c) the length of a football field
d) The length of two football fields

___ 4. You are driving a heavy vehicle and must exit a highway using an offramp that curves downhill. You should:
a) Use the posted speed limit for the offramp
b) Slow down to a safe speed before the turn
c) Wait until you are in the turn before downshifting
d) Use regular road speed limits

___ 5. Whenever backing cannot be avoided always.
a) check clearances before starting
b) back slowly
c) use a spotter or helper
d) all of the above

___ 6. What does a retarder do?
a) helps control skids
b) tells the driver the oil pressure
c) helps slow the vehicle reducing the need for using the brakes
d) None of the above

___ 7. Which of these statements about downshifting is true?
a) When you downshift for a curve, you should do so before you enter the curve
b) When you downshift for a hill, you should do so after you start down the hill
c) Never down shift until you need to
d) a and c

___ 8. What should you do if your vehicle hydroplanes?
a) Start stab braking
b) Accelerate slightly
c) Release the accelerator
d) Stop

___ 9. Which of these statements about backing a heavy vehicle is true?
a) You should avoid backing whenever you can
b) When you use a helper, he/she should use clear voice (spoken) signals
c) It is safer to back toward the right side of the vehicle than to the driver's side
d) Back on blind side

___ 10. Which of these statements about double-clutching and shifting is true?
a) It should not be done when the road is slippery
b) You can use the sound of the engine to tell you when to shift
c) You must use both clutch pedals
d) Don't use a clutch

___ 11. Which of these statements about speed management is true?
a) Empty trucks always stop in a shorter distance than fully loaded ones
b) As the speed of a vehicle doubles, its stopping distance also doubles
c) Choose a driving speed that lets you stop in the space that you can see ahead
d) Go slow as possible

___ 12. When do posted speed limits apply?
a) At night
b) When necessary to drive around a jaywalker
c) When conditions safely allow
d) When its raining

___ 13. When must you wear a seat belt?
a) At all times while driving a commercial vehicle
b) When fueling
c) While checking your tires
d) While your bob tailing across town

___ 14. A tachograph tells you what?
a) When you stopped
b) Engine RPM
c) Your speed on a graph
d) All of the above

___ 15. A tachometer tells you what?
a) RPM of engine
b) How fast your going
c) When to shift
d) All of the above

___ 16. An engine brake or retarder:
a) Saves wear and tear on cylinder walls
b) Saves wear and tear on brake linings
c) Saves wear and tear on brake lines
d) Saves on tires

___ 17. What is the proper brake application for descending long grades?
a) Short, hard pumps
b) Light, steady applications
c) Alternating hard and light
d) Use only when need to stop

___ 18. How does a driver "ride the tach" down a long grade?
a) By maintaining RPM's below maximum rated
b) By braking when RPM's reach upper shift range
c) By maintaining RPM's below lower shift range
d) By shifting into a higher gear

___ 19. Immediately before entering an intersection, you should:
a) Slow down and grip wheel more tightly
b) Quickly scan left and right
c) Slow down and check mirrors
d) Scan left and right, maintain your speed

___ 20. When is a wet road slickest?
a) Just as it begins to rain
b) when the wind is also blowing
c) When it has rained for an hour
d) When there are leaves on the road

___ 21. A convex mirror is not suitable for:
a) Spotting cars beside you
b) Judging distances
c) Use in backing
d) b & c

___ 22. When at "idle" what should your oil pressure read?
- a) 5 - 20 lbs
- b) 40 - 75 lbs
- c) 50 - 100 lbs
- d) 60 - 120 lbs

Read the following sentences carefully. Indicate your answer by placing a T or F on the line preceding the number. Answer all items in the order given. For **True** mark **a**; for **False** mark **b**.

___ 23. It is better to start answering items on a test as soon as the testing session begins.

___ 24. It is best not to review any answers to questions.

___ 25. It is easy to figure out what is expected of you without reading the directions.

___ 26. If you are uncertain of an answer, it is usually best to make a thoughtful guess.

___ 27. When responding to a multiple choice item, read all the possible choices before responding.

___ 28. It is better to guess blindly than to spend time trying to figure out the correct answer.

___ 29. It is possible to eliminate answer choices on the basis that they are absurd, or unrelated to the question.

___ 30. Information contained in one item may provide a clue to answering another item.

___ 31. You have a better chance of achieving a high score if you are anxious while you are taking a test.

___ 32. It is not necessary to ask questions about the directions for a test.

___ 33. At first, skip test items that seem especially hard.

___ 34. Use any time remaining after you have completed the test to review answers.

___ 35. Set a mental schedule for progressing through the test.

___ 36. Begin working as soon as possible and maintain accuracy in marking answers.

___ 37. Don't waste time reading all possible answer choices.

SESSION [✓ I] II III IV
(Circle Session Number)

Answer Sheet

Name: MASTER

Date: Revised 9/20/89

1. ● B C D
2. A ● C D
3. A B ● D
4. A ● C D
5. A B C ●
6. A B ● D
7. A B C ●
8. A B ● D
9. ● B C D
10 ● C D
11. A B ● D
12. A B ● D
13. ● B C D
14. A B C ●
15. ● B C D
6. A ● C D
7. A ● C D
8. ● B C D
9. A ● C D
0. ● B C D
1. A ● C D
2. ● B C D
3. A ● C D
4. A ● C D
5. A ● C D

26. ● B C D
27. ● B C D
28. A ● C D
29. ● B C D
30. ● B C D
31. A ● C D
32. A ● C D
33. ● B C D
34. ● B C D
35. ● B C D
36. ● B C D
37. A ● C D
38. A B C D
39. A B C D
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44. A B C D
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95. A B C D
96. A B C D
97. A B C D
98. A B C D
99. A B C D
100. A B C D
101. A B C D
102. A B C D
103. A B C D

TEST 1 REFERENCE

1. SL RSA 266.11/3-3
2. Federal Law
3. 2-20
4. 2-22
5. 2-13/14
6. 2-15
7. 2-22
8. 2-21
9. 2-13/14
10. 2-14/15
11. 2-22
12. 2-22
13. Federal Law
14. Information
15. Information
16. 2-15
17. 2-22
18. Inforamtion
19. Information
20. 2-21
21. 2-17
22. 2-7

SESSION II (Green)
DRIVING SAFELY

This session reviews the general knowledge and safe driving practices which all commercial drivers should know. It consists of the following units:

I - Recap -- Revision data and specific facts of Session I, handouts and discuss Session II.

II - Visual Search -- Recognition and interpretation of visual search.

III - Communication -- Recognizing the proper procedures and usage of communication for trucking industry.

IV - Space Management -- Recognizes and applies concepts and principles of managing space.

V - Night Operation -- Recognizing and adapting to various night operations.

VI - Extreme Driving Conditions -- Recognizes and adapts to extreme driving conditions.

VII - Hazard Perception -- Recognize and interpret specific facts related to hazard perception.

VIII - Test Taking Skill-- Help with test taking.

IX - Proficiency Test -- Final step to evaluate text of course.

****INSTRUCTORS NOTE**

Watch time for all parts. Must start part IV no later than four hours from start of class!!!!

SESSION II

1. Recap
2. Visual Search
3. Communication
4. Space Management
5. Night Operation
6. Extreme Driving Conditions
7. Hazard Perception
8. Test Taking Skills (approximately 15-30 minutes)
9. Proficiency Test (approximately 65 minutes)
10. Referral:
    - A. Upon successful completion of Proficiency Test, student progresses to Session III.
    - B. Unsuccessful completion of Proficiency Test, student progresses to Makeup Session.

SESSION II TRAINING HOURS = 5

SESSION: II

SUBJECT: Recap

TIME ALLOTTED: 45 Min.

PAGE: 2 - 1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Review data and specific facts of previous session.	1.A. Laws B. Control Systems C. Basic Control D. Shifting E. Backing F. Speed Management	1. Lecture - Recap CDL Session I	1. Asking factual and specific questions.
2. Present curriculum handouts for Session II.	2. Define handout Session II	2. Handout - Lecture	2. Proficiency Test.

SESSION II

1. RECAP

Objective

Review data and specific facts of previous session directly related to CDL Manual and Test.

Topic(s)

1. Laws - (1-8, 1-9)
2. Control Systems
3. Basic Control (2-12, Top 2-13)
4. Shifting (2-14, 2-15)
5. Backing (2-13, 2-14)
6. Speed Management (2-20, 2-21, 2-22)

chniques/Procedures and Activities

Recap - Session I: Text of CDLM, go to Color Code Session I. Refer to Color Code, highlighted area, Session I (Color Code - Yellow)

1. Laws - (1-8, 1-9, 3-2, 3-3)
   - A. Seat Belts
   - B. 40´ Length Law Straight Truck
   - C. 96" to 102" Width All Roads (Note: Tests read 96")
   - D. 48´ Box Length
   - E. Weight 80,000 5 Axles Maximum
     80,000 Interstate Even With Tri-axle

   Touch on Overhead CDLM, pages 1-8, 1-9
   - F. .04 Blood Alcohol Level - Truck Only
   - G. One License Only - Commercial
   - H. DOT Medical Certificate as of 1/90

2. Control Systems
   Handout 1.2-37
   1.2-38

3. Basic Control
   - A. No Roll Back on Start
   - B. Wheel Held at Opposite Position (9-3)
   - C. Traction, Release Acceleration

4. Shifting - (2-14, 2-15)
    A. Double Clutch - Clutch all the time.
    B. Curves, Hills, Shift Prior

5. Backing - (2-13, 2-14)
    A. Safe
    B. Slowly
    C. Helper when possible.

6. Speed Management - (2-20, 2-21, 2-22)
    I. A. 12 - 15 Seconds (1/4 mile)
        B. Empty greater the loaded stop distance. (2-17)
        C. 3/4 seconds 55 mph 60' in 3/4 seconds.
        D. Double speed 4 times destructive power crash.
        E. 55 mph dry pavement 170' to stop 4 1/2 seconds.
        F. 55 mph 6 seconds to stop Football field (300').
        G. Smaller Convex mirror, further away. Distortion. (2-17)
        H. High speed major causes fatal crashes.

    II. A. Condition: slippery surfaces, 1/3 reduction speed, snow, 1/2 reduction speed, ice - crawl. (2-20, 2-21, 2-22)
        B. Shaded area.
        C. Bridges approximately 32° freeze.
        D. Melting ice.
        E. Black Ice.
        F. Vechile Ice - Back of mirror/support.
        G. Rain - Bleeding tar, right after start.
        H. Hydroplanning - 30 mph slow.

SESSION II

2. OVERVIEW

Objective

Present curriculum handouts for Session II

Topic(s)

Define handout Session II

Techniques/Procedures and Activities

Handout - Lecture - CDLM

SESSION: II

SUBJECT: Visual Search

TIME ALLOTTED: 15 Min.

PAGE: 2 - 2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognition and interpretation of visual search.	1.A. Seeing ahead B. Importance of looking far enough ahead C. How far to look for traffic D. Look for road conditions E. Seeing sides and rear F. Regular checks G. Traffic H. Checking your vehicle I. Special situations J. Lane changes K. Turns, merges, tight maneuvers, use of mirrors, check quickly, understanding what you see	1. Lecture - Commercial Driver's Manual A.-K. - 2-16, 2-17 1. Overhead Transparencies A.-C. - 2.1.15, 2.1-16 1. N.H. State Law Commercial Driver's Manual A.-K. - 2-16	1. Asking factual and specific questions.
			2. Proficiency Test.

SESSION II

VISUAL SEARCH

Objective

Recognition and interpretation of visual search.

Topic(s)

1. Seeing ahead.
2. Importance of looking far enough ahead.
3. How far to look for traffic.
4. Look for road conditions.
5. Seeing sides and rear.
6. Regular checks.
7. Traffic.
8. Checking your vehicle.
9. Special situations.
10. Lane changes.
11. Turns, merges, tight maneuvers, use of mirrors, check quickly, understanding what you see.

Techniques/Procedures and Activities

Overhead Transparencies
2.1-15
2.1-16

New Hampshire State Law Commercial Driver's Manual

Lecture: CDLM 2-16, Top 2-17

To be a safe driver you need to know what's going on all around your vehicle. Not looking properly is a major cause of accidents.

All drivers look ahead; but many don't look **far enough** ahead.

Importance of Looking Far Enough Ahead. Because stopping or changing lanes can take a lot of distance, knowing what the traffic is doing on all sides of you is very important. You need to look well ahead to make sure you have room to make these moves safely.

How Far Ahead to Look. Most good drivers look 12 to 15 seconds ahead. That means looking ahead the distance you will travel in 12 to 15 seconds. At lower speeds, that's about one block. At highway speeds it's **about a quarter of a mile.** If you're not looking that far ahead, you may have to stop too quickly to make quick lane changes. Looking **12 to 15 seconds ahead doesn't mean**

ot paying attention to things that are closer. Good drivers shift their attention back and forth, near and far.

Look for Traffic. Look for vehicles coming onto the highway or into your lane or turning. Watch for brakelights from slowing vehicles. By seeing these things far enough ahead, you can change your speed or change lanes if necessary to avoid a problem.

Look for Road Conditions. Look for hills and curves - anything you´ll have to slow or change lanes for. Pay attention to traffic signals and signs. If a light has been green for a long time, it will probably change before you get there. Start slowing down and be ready to stop. Traffic signs may alert you to road conditions where you may have to change speed.

It´s important to know what´s going on behind and to the sides. Check your mirrors regularly. Check more often in special situations.

Regular Checks. You need to make regular checks of your mirrors to be aware of traffic and to check your vehicle.

Traffic. Check the mirrors for vehicles on either side and in back of you. In an emergency, you may need to know whether you can make a quick lane change. Use your mirrors to spot overtaking vehicles. There are "blind spots" that your mirrors cannot show you. Check your mirrors regularly to know where other vehicles are around you, and to see if they move into your blind spots.

Check your vehicle. Use the mirrors to keep an eye on your tires. It´s one way to spot a tire fire. If you´re carrying open cargo, you can use the mirrors to check it. Look for loose straps, ropes or chains. Watch for a flapping or ballooning tarp.

Special Situations. Special situations require more than regular mirror checks. These are **lane change, turns, merges, and tight maneuvers.**

Lane changes. You need to check your mirror to make sure no one is alongside you or about to pass you. Check you mirrors:

-- Before you change lanes to make sure there is enough room.
-- After you have signaled, to check that no one has moved out of your blind spot.
-- Right after you start the lane change to double-check that your path is clear.
-- After you complete the lane change.

Turns. In turns, check your mirrors to make sure the rear of your vehicle will not hit anything.

Merges. When merging, use your mirrors to make sure the gap in traffic is large enough for you to enter safely.

Tight Maneuvers. Any time you are driving in close quarters check your mirrors often. Make sure you have enough clearance.

How to Use Mirrors. Use mirrors correctly by checking them quickly and understanding what you see.

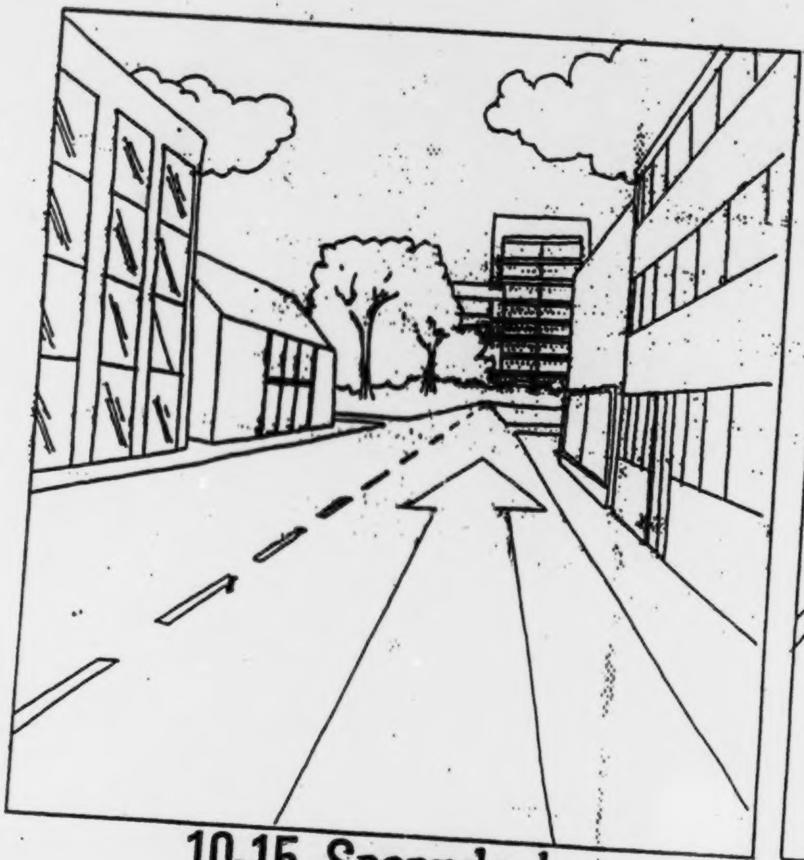
Checking quickly. When you use your mirrors while driving on the road, check quickly. Look back and forth between the mirrors and the road ahead. Don't focus on the mirrors for too long. Otherwise, you will travel quite a distance without knowing what's happening ahead.

Understanding what you see. Many large vehicles have curved (convex, "fisheye", "spot", "bugeye") **mirrors that show a wider area than flat mirrors.** This is often helpful. **But everything appears smaller in a convex mirror** than it would if you were looking at it directly. Things also seem farther away than they really are. It's important to realize this and to allow for it.

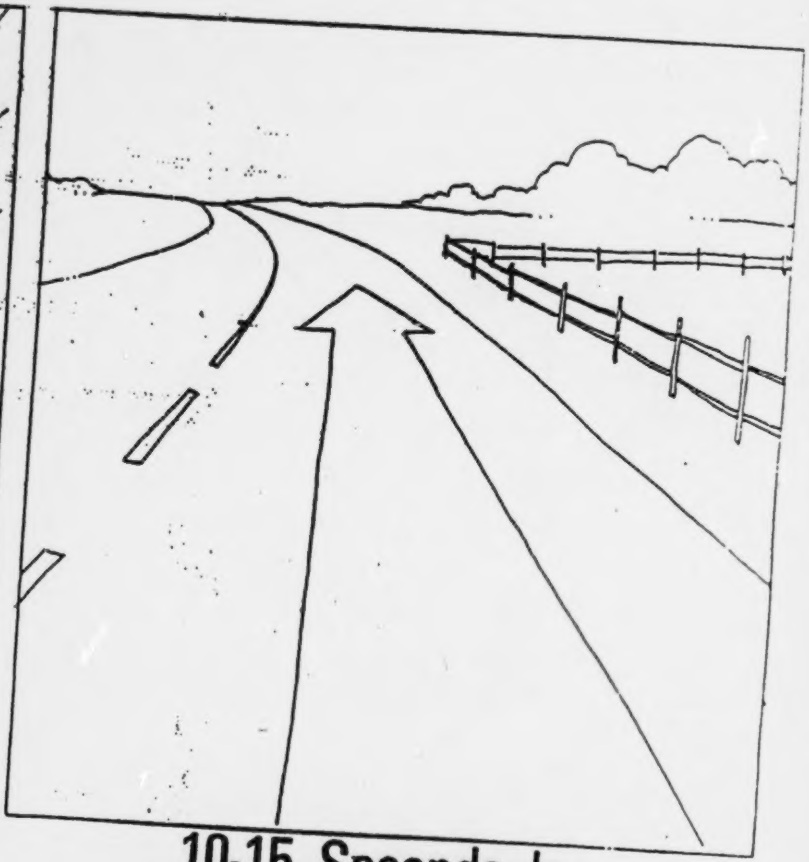
*Page 2-24) Highlighted in
2-25) CDL Manual
Check Figures 2-11, 2-12

Seeing Ahead

2.1-15



10-15 Seconds Is
About One Block

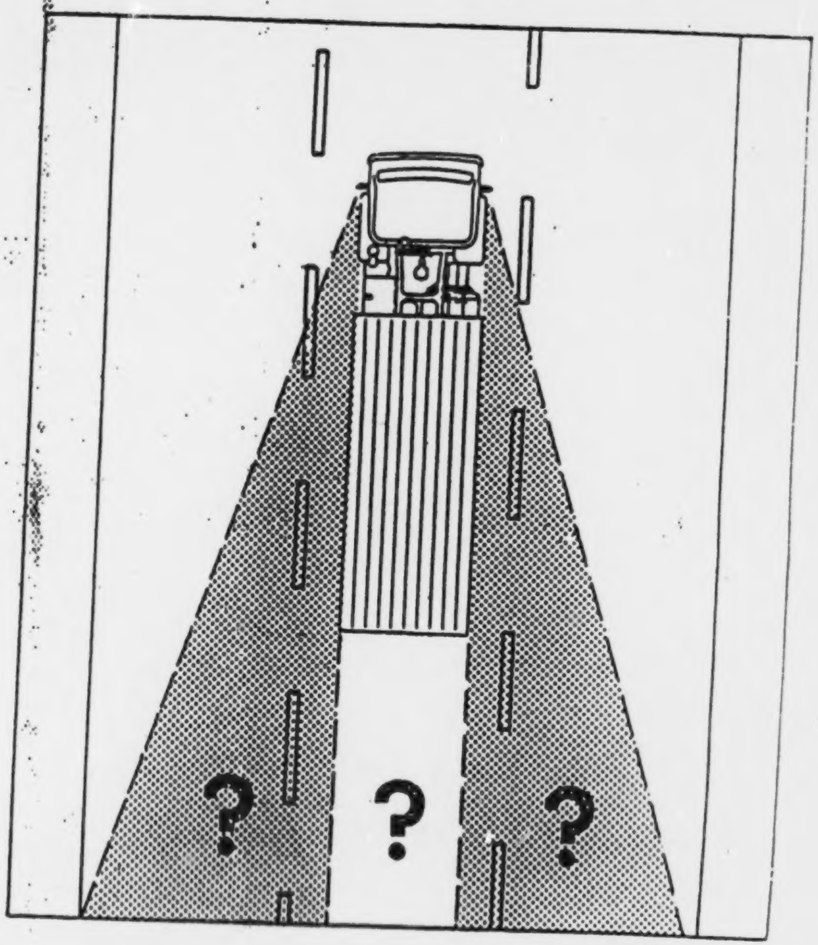


10-15 Seconds Is
About a Quarter-Mile

1-2

Checking to Sides and Rear

- Check Mirrors Several Times a Minute
- Be Especially Alert at
  - Intersections
  - Shopping Centers
  - Construction Sites
  - School Zones



2.1-16

Visual 7

SESSION: II
SUBJECT: Communication
TIME ALLOTTED: 25 Min.
PAGE: 2 - 3

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizing the proper procedure and usage of communication for the trucking industry.	1.A. Signal your intention a. Turns b. Lane changes c. Slowing down d. Trouble ahead e. Stopping on red f. Driving slowly g. Don't direct traffic	1. Lecture - Commercial Driver's Manual 2-17, 2-18, 2-19, 2-20	1. Asking factual and specific questions.
	1.B. Communicating your presence a. Passing b. Hard to see c. Parked side of the road d. Breaking down with placement of triangles and parking e. Use of horn only when needed	1.B. Overhead Transparencies d. 5.4-21, 5.4-22, 5.4-23, 5.4-24	
	1.C. Handouts 5.4-22, 5.4-23, 5.4-24		
			2. Proficiency Test.

SESSION II

COMMUNICATION

Objective

Recognizing the proper procedure and usage of communication for trucking industry.

Topic(s)

1. Signal your intention
   - A. Turns;
   - B. Lane changes;
   - C. Slowing down;
   - D. Trouble ahead;
   - E. Stopping on road;
   - F. Driving slowly;
   - G. Don't direct traffic.

2. Communicating your presence
   - A. Passing;
   - B. Hard to see;
   - C. parked side of the road;
   - D. Breaking down with placement of triangles and parking;
   - E. Use of horn only when needed.

Techniques/Procedures and Activities

Overhead Transparencies
5.4-21 Mention illegal State N.H. (spike type)
5.4-22
5.4-23
5.4-24

Handouts
5.4-22
5.4-23
5.4-24

Lecture: CDLM 2-17, 2-18, 2-19, Top 2-20

Other drivers can't know what you are going to do until you tell them.

Signaling what you intend to do is important for safety. Here are some general rules for signaling.

Turns. There are three good rules for using turn signals.

1. **Signal early:** Signal well before you turn. It is the best way to keep others from trying to pass you.
2. **Signal continuously:** You need both hands on the wheel to turn safely. Don't cancel the signal until you have completed the turn.
3. **Cancel your signal:** Don't forget to turn off your turn signal after you've turned (if you don't have self-cancelling signals).

Lane Changes. Put your turn signal on before changing lanes. Change lanes slowly and smoothly. That way a driver you didn't see may have a chance to honk his/her horn to avoid your vehicle.

Slowing Down. Warn drivers behind you when you see you'll need to slow down. A few light taps on the brake pedal - enough to flash the brake lights -- should warn following drivers. Use the **4-way emergency flashers for times when you are driving very slow or are stopped.** Warn other drivers in any of the following situations:

Trouble Ahead. The size of your vehicle may make it hard for drivers behind you to see hazards ahead. If you see a hazard that will require slowing down, warn the drivers behind by flashing your brake lights.

Tight Turns. Most car drivers don't know how slow you have to go to make a tight turn in a large vehicle. Give drivers behind you warning by braking early and slowing gradually.

Stopping on the Road. Truck and bus drivers sometimes stop in the road to unload cargo or passengers or to stop at a railroad crossing. **Warn following drivers by flashing your brake lights.** Don't stop suddenly. **Use your four way flashers.**

Driving Slowly. Drivers often do not realize how fast they are catching up to a slow vehicle until they are very close. If you must drive slowly, alert following drivers by turning on your emergency flashers if it is legal. (**Laws regarding the use of flashers differ from one state to another.** Check the laws of the states where you will drive.)**NH under minimum posted speed limit!**

Don't Direct Traffic. Some drivers try to help out others by signaling when it is safe to pass. **You should not do this.** You could cause an accident. You could be blamed and it could cost you many thousands of dollars.

Other drivers may not notice your vehicle even when it's in plain sight. Let them know you're there to help prevent accidents.

When Passing. Whenever you are about to pass a vehicle, pedestrian, or bicyclist, assume they don't see you. They could suddenly move in front of you. **When it is legal, tap the horn**

lightly or, at night, flash your lights from low to high beam and back. And drive carefully enough to avoid a crash even if they don't see or hear you.

When It's Hard to See. At dawn or dusk or in rain or snow, you need to make yourself easier to see. If you are having trouble seeing other vehicles, other drivers will have trouble seeing you. **Turn on your lights.** Use the headlights, not just the identification or clearance lights. Use the low beams; high beams can bother people in the daytime as at night. N.H. 1/2 after 1/2 before.

When Parked At the Side of the Road. When you pull off the road and stop, be sure to turn on the 4-way emergency flashers. This is important at night. Don't trust the taillights to give warning. Drivers have crashed into the rear of a parked vehicle because they thought it was moving normally.

If you must stop on a road or the shoulder of a road, **you should put out your reflective triangles within ten minutes.** Place your warning devices at the following locations:

-- **On the traffic side of the vehicle, within ten feet of the front or rear corners - to mark the location of the vehicle. (See Figure 2-8).**
-- **About 100 feet behind and ahead of the vehicle, on the shoulder or in the lane you are stopped in. (See Figure 2-8.)**
-- **Back beyond any hill, curve, or other obstruction that prevents other drivers from seeing the vehicle within 500 feet. (See Figure 2-9.)**
-- **If you must stop on or by a one-way or divided highway, place warning devices 10 feet, 100 feet, and 200 feet toward the approaching traffic. (See Figure 2-10.)**

When putting out the triangles hold them between yourself and the oncoming traffic for your own safety. (So other drivers can see you.)

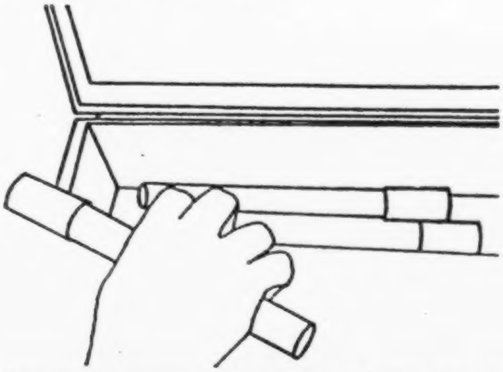
Use Your Horn When Needed. Your horn can let others know you're there. It can help to avoid a crash. Use your horn when needed. However, it can startle others and could be dangerous when used unnecessarily.

* Pictures and Diagrams (2-19, 2-20)
2-8
2-9
2-10

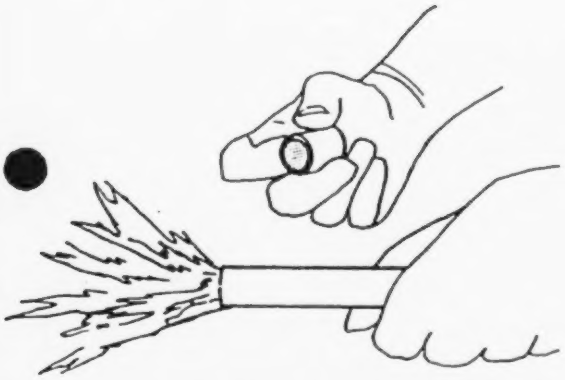
Visual 3

Use of Flares or Fusees

- Use With Caution
- Use W Pattern for Longer Burning Time
- Store Away From Moisture
- Do Not Use With Explosives or Flammables

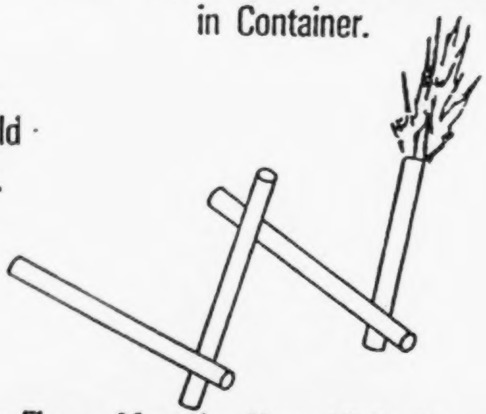


Flares for Emergency Use Should Be Kept Dry, Away From Moisture in Truck Cab. Fleets Find It Best to Store Them in Container.



Flares Are Ignited by Striking the Cap Along the Striker Button on the Side. Hold Flare Well Away From Body or Clothing.

NOTE: MENTION!!
NH: SPIKES ARE NOT ALLOWED.

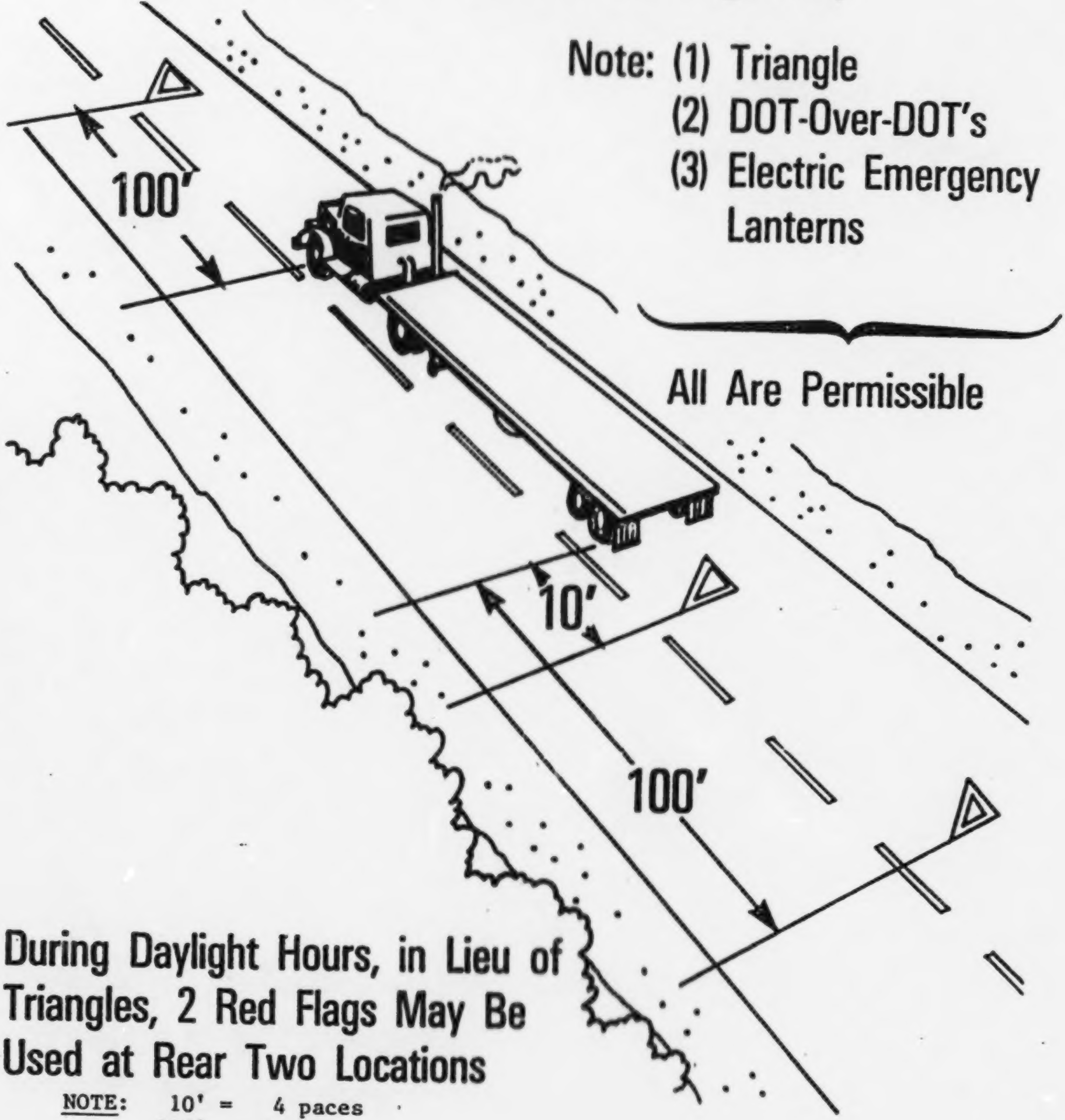


When Flares Must be Kept Alight for an Hour or Longer, Drivers May Arrange Them in W or Criss-Cross Pattern of Four.

Visual 4

Emergency Warning Devices

Two Lane or Undivided Highway



Note: (1) Triangle
(2) DOT-Over-DOT's
(3) Electric Emergency Lanterns

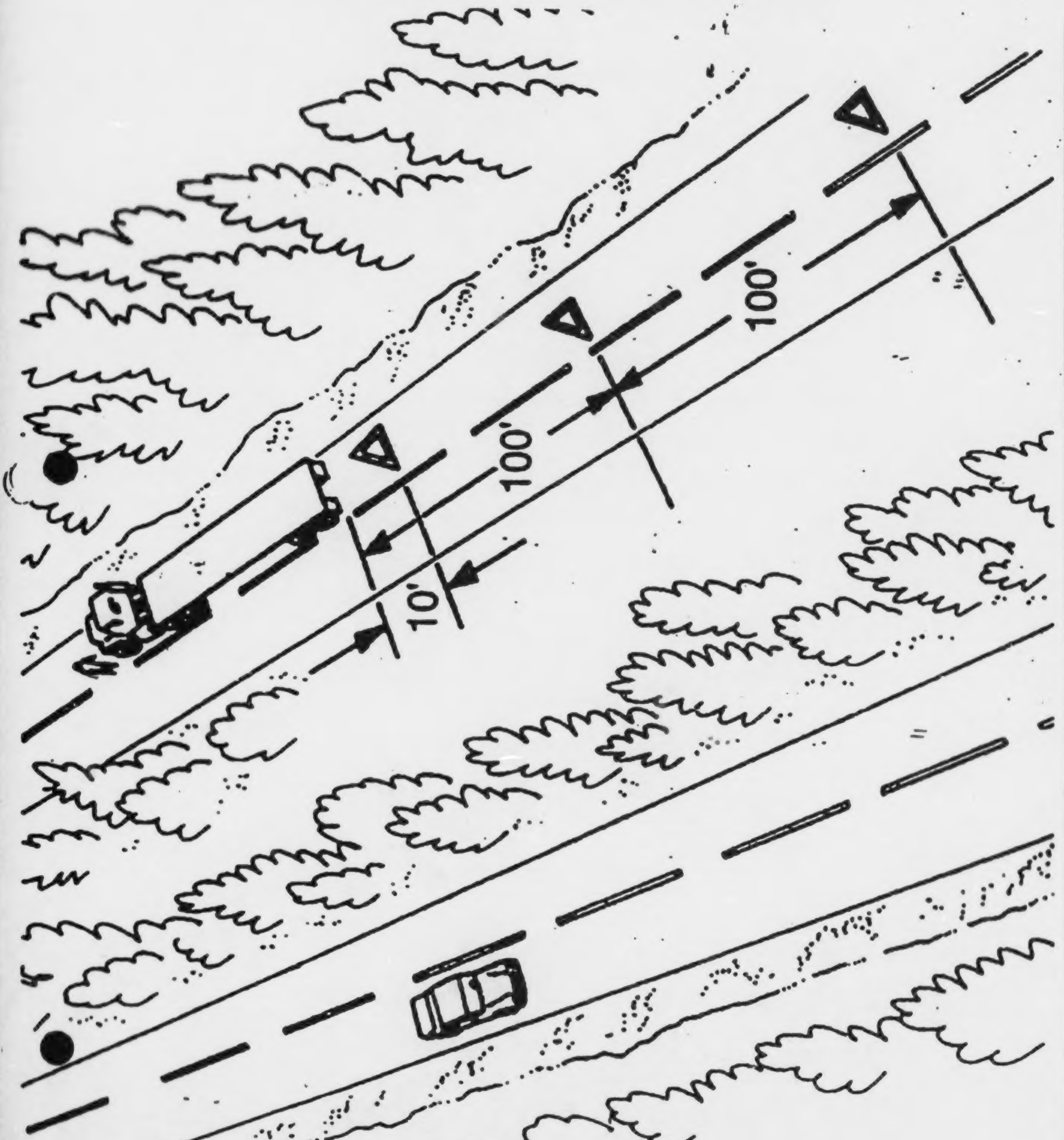
All Are Permissible

During Daylight Hours, in Lieu of Triangles, 2 Red Flags May Be Used at Rear Two Locations

NOTE:
10' = 4 paces
100' = 40 paces
200' = 80 paces
500' = 200 paces

Emergency Warning Devices

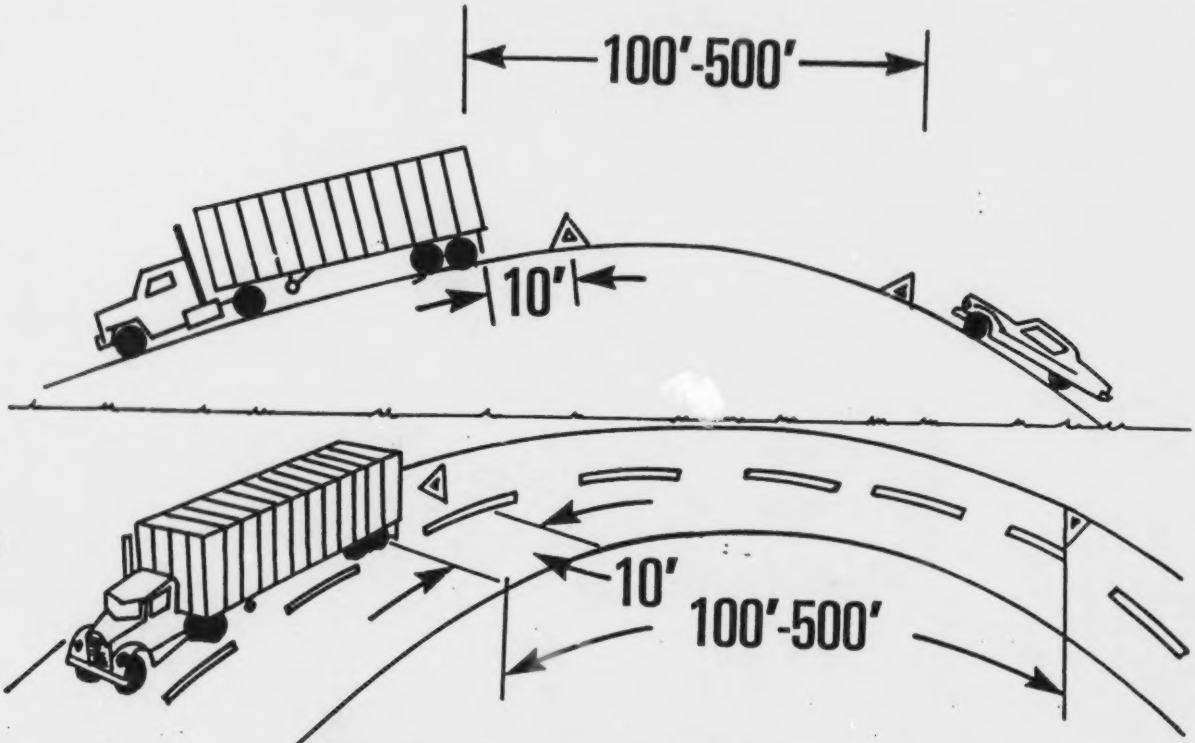
One-Way or Divided Highway



Visual 6

Emergency Warning Devices

Obstructed View



General Rule of Thumb: If Line of Sight View Is Obstructed Due to Hill or Curve, Move the Rear Most Triangle to a Point Back Down the Road So That Adequate Warning Is Provided

157.1

SESSION: II

SUBJECT: Space Management

TIME ALLOTTED: 20 Min.

PAGE: 2 - 4

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizes and applies concepts and principles of managing space.	1.A. Space ahead	1. Overhead Transparencies A-E. 2.4-22, 2.4-24, 2.4-26	1. Asking factual and specific questions.
	B. Space behind		
	C. Overhead space	1. Lecture - Commercial Driver's Manual A.-G. - 2-23, 2-24, 2-25, 2-26	
	D. Space below		
	E. Space beside		
	F. Space in making turns right and left		
	G. Space needed to cross or enter traffic		
			2. Proficiency Test.

SESSION II

SPACE MANAGEMENT

Objective

Recognizes and applies concepts and principles of managing space. Drives appropriately for road conditions.

Topic(s)

1. Space ahead.
2. Space behind.
3. Overhead space.
4. Space below.
5. Space beside.
6. Space in making turns right and left.
7. Space needed to cross or enter traffic.

Techniques/Procedures and Activities

Overhead Transparencies
2.4-22
2.4-24
2.4-26

Lecture: CDLM 2-23, 2-24, 2-25, 2-26

To be a safe driver, you need space all around your vehicle. When things go wrong, space gives you time to think and to take action.

To have space available when something goes wrong, you need to **manage** space. While this is true for all drivers, it is very important for large vehicles. They take up more space and they require more space for stopping and turning.

Of all the space around your vehicle, it is the area ahead of the vehicle - the space you're driving into -- that is most important.

The Need for Space Ahead. (Space Cushion) You need space ahead in case you must suddenly stop. According to accident reports, the vehicle that trucks and buses most often run into is the one in front of them. The most frequent cause is **following too closely**. Remember, if the vehicle ahead of you is smaller than yours, it can probably stop faster than you can. You may crash if you are following too closely.

How Much Space? How much space should you keep in front of you? One good rule says you need at least one second for each 10 feet of vehicle length at speeds below 40 mph. At greater speeds, you must add one second for safety. For example, if you are driving a 40-foot vehicle, you should leave 4 seconds between you and the vehicle ahead. In a 60- foot rig, you'll need 6 seconds. Over 40 mph, you'd need 5 seconds for a 40-foot vehicle and 7 seconds for a 60-foot vehicle.

To know how much space you have, wait until the vehicle ahead passes a shadow on the road, a pavement marking, or some other clear landmark. Then count off the seconds like this: "one thousand and one, one thousand and two" and so on, until you reach the same spot. Compare your count with the rule of one second for every 10 feet of length. If you are driving a 40 foot truck and only counted up to 2 seconds, you're too close. Drop back a little and count again until you have 4 seconds of following distance (or 5 seconds, if you're going over 40 mph). After a little practice, you will know how far back you should be. Remember to add one second for speeds above 40 mph. Also remember that when the road is slippery, you need much more space to stop.

You can't stop others from following you too close. But there are things you can do to make it safer.

-- Stay to the right.
-- Deal with tailgaters safely.
-- Always leave yourself an out.

Stay to the Right. Heavy vehicles are often tailgated when they can't keep up with the speed of traffic. This often happens when you're going uphill. If a heavy load is slowing you down, stay in the right lane if you can. Going uphill, you should not pass another slow vehicle unless you can get around quickly and safely.

Dealing with Tailgaters Safely. In a large vehicle, it's often hard to see whether a vehicle is close behind you. You may be tailgated:

-- **When you are traveling slowly.** Drivers trapped behind slow vehicles often follow closely.
-- **In bad weather.** Many car drivers follow large vehicles closely during bad weather, especially when it is hard to see the road ahead.

If you find yourself being tailgated, here are some things you can do to reduce the chances of a crash:

-- **Avoid quick changes:** If you have to slow down to turn, signal early and reduce speed very gradually.

-- **Increase your following distance:** Opening up room in front of you will help avoid having to make sudden speed or direction changes. It also makes it easier for the tailgater to get around you.
-- **Don't speed up:** It's safer to be tailgated at a low speed than a high speed.
-- **Avoid tricks:** Don't turn on your tail lights or flash your brake lights. Follow the suggestions above.

Commercial vehicles are often wide and take up most of a lane. Safe drivers will manage what little space they have. You can do this by keeping your vehicle centered in your lane, and avoid driving alongside others.

Staying Centered in a Lane. You need to keep your vehicle centered in the lane to keep safe clearance on either side. If your vehicle is wide, you have little room to spare.

Traveling Next to Others. There are two dangers in traveling alongside other vehicles:

-- Another driver may change lanes suddenly and turn into you.
-- You may be trapped when you need to change lanes.

Find an open spot where you aren't near other traffic. When traffic is heavy, it may be hard to find an open spot. If you must travel near other vehicles, try to keep as much space as possible between you and them. Also, drop back or pull forward so that you are sure the other driver can see you.

Strong Winds. Strong winds make it difficult to stay in your lane. The problem is usually worse for lighter vehicles. This problem can be especially bad coming out of tunnels. Don't drive alongside others if you can avoid it.

Hitting overhead objects is a danger. Make sure you always have overhead clearance.

-- Don't assume that the heights posted at bridges and overpasses are correct. Repaving or packed snow may have reduced the clearances since the heights were posted.
-- The weight of a cargo can changes it height. An empty van is higher than a loaded one. That you got under a bridge when you were loaded does not mean that you can do it when you are empty.
-- If you doubt you have safe space to pass under an object, go slowly. If you aren't sure you can make it, take another route. Warnings are often posted on low bridges or underpasses, but sometimes they are not.
-- Some roads can cause a vehicle to tilt. There can be a problem clearing objects along the edge of the road, such as signs or trees. Where this is a problem, drive a little closer to the center of the road.

-- Before you back into an area, get out and check for overhanging objects, such as trees, branches, fire escapes or electric wires. it's easy to miss seeing them while you are backing. (Also check for other hazards at the same time.)

Many drivers forget about the space under their vehicles. That space can be very small when a vehicle is heavily loaded. Railroad tracks can stick up several inches. This is often a problem on dirt roads and in unpaved yards where the surface around the tracks can wear away. Don't take a chance on getting hung up halfway across. Drainage channels across roads can cause the end of some vehicles to drag. Cross such depressions carefully.

The space around a truck or bus is important in turns. Because of wide turning and off tracking, large vehicles can hit other vehicles or objects during turns.

Right Turns. Here are some rules to help prevent right-turn crashes:

-- Turn slowly to give yourself and others more time to avoid problems.

-- **if you are driving a truck or bus that cannot make the right turn without swinging into another lane, turn wide as you complete the turn**, as shown in Figure 2-11. Keep the rear of your vehicle close to the curb. This will stop other drivers from passing you on the right.

-- Don't turn wide to the left as you start the turn, as shown in **Figure 2-12, Page 2-25.** A following driver may think you are turning left and try to pass you on the right. You may crash into the other vehicle as you complete your turn.

-- If you must cross into the oncoming lane to make a turn, watch out for vehicles coming toward you. Give them room to go by or to stop. However, don't back up for them, because you might hit someone behind you.

Left Turns. On a left turn, **make sure you have reached the center of the intersection before you start the left turn.** (Page 2-26) If you turn too soon, the left side of your vehicle may hit another vehicle because of offtracking.

If there are two turning lanes, always take the right-hand turn lane, as shown in **Figure 2-13.** Don't start in the inside lane because you may have to swing right to make the turn. Drivers on your right may be hard for you to see. You may crash into them.

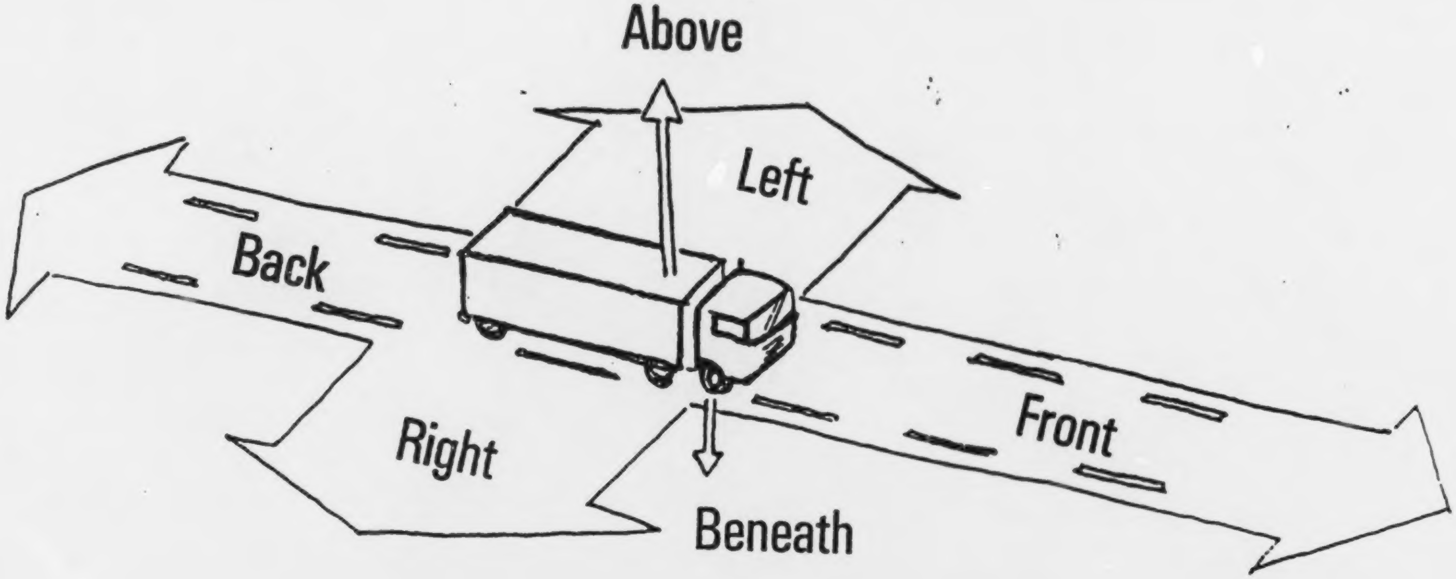
Be aware of the size and weight of your vehicle when you cross or enter traffic. Here are some important things to keep in mind:

-- Because of slow acceleration and the space large vehicles require, you may need a much larger gap to enter traffic than you would in a car.

-- Acceleration varies with the load. Allow more room if your vehicle is heavily loaded.

-- Before you start across a road, make sure you can get all the way across before traffic reaches you.

Space Cushion


Above
Left
Back
Right
Front
Beneath

2.4-22

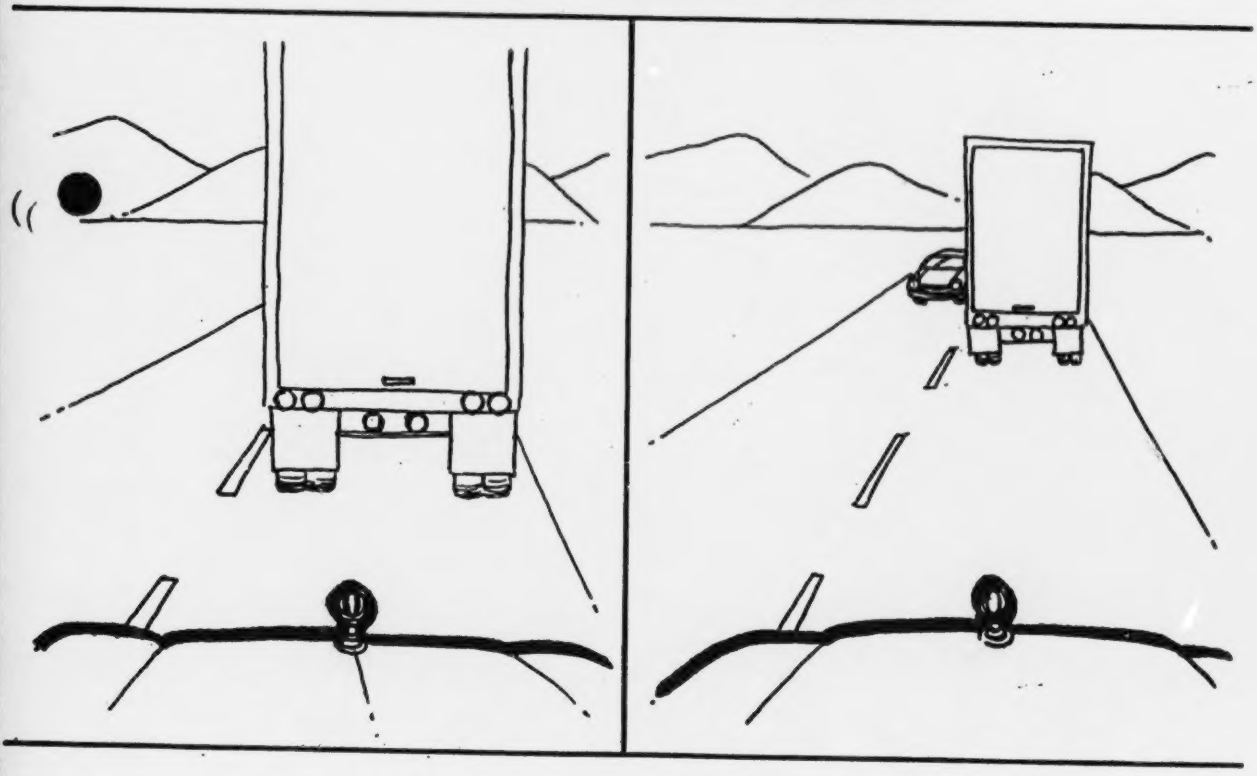
Visual 1

Visual 3

Tailgating

Causes

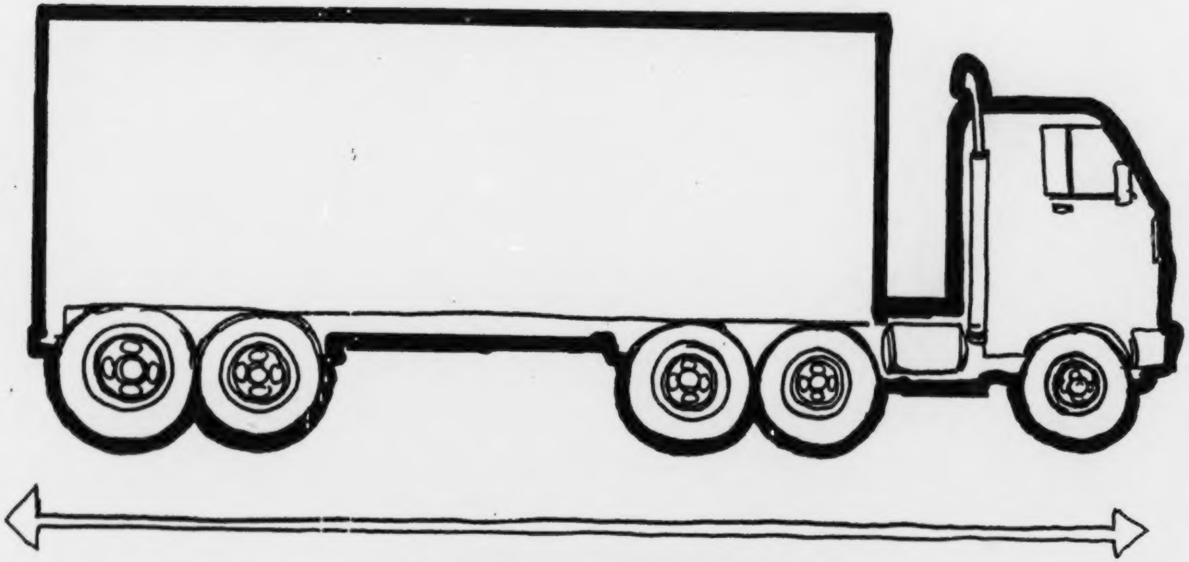
- 25% of All Accidents
- Panic Stops
- Frightened Car Drivers
- Restricted Sight Distance



Heavy Vehicle Formula for Timed Interval Following Distance

- 1 Second Required for Each 10 Feet of Vehicle Length – at Speeds Under 40 MPH
- Above 40 MPH Use Same Formula, Then Add 1 Second for the Additional Speed

Visual 5



55 ft Rig = 6 Seconds

SES ON: II

SUBJECT: Night Operations

TIME ALLOTTED: 15 Min.

PAGE: 2 - 5

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizing and adapting to various night operations.	1.A. Driving factors B. Vision C. Glare D. Fatigue E. Stop driving and pull over to a safe place F. Roadway G. Poor lighting H. Drunk drivers I. Vehicle factors J. Headlight and others lights K. Night driving procedures L. Pre-trip procedures M. Avoiding blinding others N. Avoiding glare from oncoming vehicles O. Use of high beams when you can	1. Lecture - Commercial Driver's Manual 2-27, 2-28, 2-29 1. Overhead Transparencies 1.A 2.5-16 1.1. 2.5-13 1.L 2.5-14 1.K 2.5-15	1. Asking factual and specific questions. 2. Proficiency Test.

SESSION II

NIGHT OPERATION

Objective

Recognizing and adapting to various night operations.

Topic(s)

1. Driver factors.
2. Vision.
3. Glare.
4. Fatigue.
5. Stop driving and pull over to a safe place.
6. Roadway.
7. Poor light.
8. Drunk.
9. Vehicle.
10. Headlight and others.
11. Night driving procedures.
12. Pre-trip procedures.
13. Avoiding blinding others.
14. Avoiding glare from oncoming vehicles.

[illegible]. Use of high beams when you can.

Techniques/Procedures and Activities

Overhead Transparencies
2.5-13
2.5-14
2.5-15
2.5-16

Lecture: CDLM 2-27, 2-28, Top 2-29

You are at greater risk when you drive at night. Drivers can't see hazards as soon as in daylight, so they have less time to respond. Drivers caught by surprise are less able to avoid a crash.

The problems of night driving involve the driver, the roadway, and the vehicle. We will discuss each of these factors.

Vision: People can't see as sharply at night or in dim light. Also, the eyes need time to adjust to seeing in dim light. Most people have noticed this when walking into a dark movie theater.

Glare: Drivers can be blinded for a short time by bright light. [illegible] takes time to recover from this blindness. Older drivers are especially bothered by glare. Most people have been temporarily blinded by camera flash units or by the high beams of an oncoming vehicle. It can take several seconds to recover from glare. **Even two seconds of glare blindness can be dangerous. A vehicle going 55 mph will travel more than half the distance of a football field during that time.** Don't look directly at bright lights when driving. **Look at the right side of the road.** Watch the sidelines when someone coming toward you has very bright lights.

Fatigue and Lack of Alertness: Fatigue (being tired) and lack of alertness are bigger problems at night. The body's need for sleep is beyond a person's control. Most people are less alert at night, especially after midnight. This is particularly true if you have been driving for a long time. Drivers may not see hazards as soon or react as quickly, so the chance of a crash is greater. **If you are sleepy, the only safe cure is to get off the road and get some sleep.** If you don't, you risk your life and the lives of others.

Poor Lighting: In the daytime there is usually enough light to see well. This is not true at night. Some areas may have bright street lights, but many areas will have poor lighting. On most roads you will probably have to depend entirely on your headlights.

Less light means you will not be able to see hazards as well as in daytime. Road users who do not have lights are hard to see. There are many accidents at night involving pedestrians, joggers, bicyclists, and animals.

Even when there are lights, the road scene can be confusing. Traffic signals and hazards can be hard to see against a background of signs, shop windows, and other lights.

Drive slower when lighting is poor or confusing. Drive slowly enough to be sure you can stop in the distance you can see ahead.

Drunk Drivers: Drunk drivers and drivers under the influence of drugs are a hazard to themselves and to you. Be especially alert around the closing times for bars and taverns. Watch for drivers who have trouble staying in their lane or maintaining speed, stop without reason, or show other signs of being under the influence of alcohol or drugs.

Headlights: At night your headlights will usually be the main source of light for you to see and for others to see you. You can't see nearly as much with your headlights as you can see in the daytime. **With low beams you can see ahead about 250 feet and with high beams about 350-500 feet. You must adjust your speed to keep your stopping distance within your sight distance.** This means going slow enough to be able to stop within the range of your headlights. Otherwise, by the time you see a hazard, you will not have time to stop. Federal Law: Put on headlights one-half hour after sunset and turn off no sooner than one half hour after sunrise.

Night driving can be more dangerous if you have problems with your headlights. Dirty headlights may give only half the light they should. This cuts down your ability to see, and makes it harder for others to see you. Make sure your lights are clean and working. Headlights can be out of adjustment. If they don´t point in the right direction, they don´t give you a good view and they can blind other drivers. Have a qualified person make sure they are adjusted properly.

Other Lights: In order for you to be seen easily, the following must be clean and working properly:

-- **Reflectors.**
-- **Marker lights.**
-- **Clearance lights.**
-- **Tail lights.**
-- **Identification lights.**

Turn Signals and Brake Lights: At night your turn signals and brake lights are even more important for telling other drivers what you intend to do. Make sure you have clean, working turn signals and stop lights.

Windshields and Mirrors: it is more important at night than in the daytime to have clean windshields and mirrors. Bright lights at night can cause dirt on your windshield or mirrors to create a glare of its own, blocking your view. Most people have experienced driving toward the sun just as it has risen or is about to set and found that they can barely see through a windshield that seemed to look o.k. in the middle of the day. Clean your windshield on the inside and outside for safe driving at night.

Pre-Trip Procedures: Make sure you are rested and alert. If you are drowsy, **sleep** before you drive! Even a nap can save your life or the lives of others. If you wear eyeglasses, make sure they are clean and unscratched. Don´t wear sun glasses at night. Do a complete pre-trip inspection of your vehicle. Pay attention to checking all lights and reflectors and cleaning those you can reach.

Avoid Blinding Others: Glare from your headlights can cause problems for drivers coming towards you. They can also bother drivers going in the same direction you are, when your lights shine in their rearview mirrors. Dim your lights before they cause glare for other drivers. **Dim your lights within 500 feet of an oncoming vehicle and when following another vehicle within 500 feet.**

Avoid glare from oncoming vehicles: Do not look directly at lights of oncoming vehicles. Look slightly to the right at a right lane or edge marking if available. If other drivers don´t put their low beams on, don´t try to "get back at them" by putting your own high beams on. This increases glare for oncoming drivers and increases the chance of a crash.

Use High Beams When You Can: Some drivers make the mistake of always using low beams. This seriously cuts down on their ability to see ahead. Use high beams when it is safe and legal to do so. **Use them when you are not within 500 feet of an approaching vehicle.** Also, don't let the inside of your cab get too bright. This makes it harder to see outside. Keep the interior light off and adjust your instrument lights as low as you can and still read the gauges.

If you get sleepy, stop driving at the nearest safe place: People often don't realize how close they are to falling asleep even when their eyelids are falling shut. If you can safely do so, look at yourself in a mirror. If you look sleepy, or you just feel sleepy, **stop driving!** You are in a very dangerous condition. The only safe cure is to sleep.

***Auxillary lighting must go off with high beams!**

Visual 3

Vehicle Factors

- Headlights
- Auxiliary Lights
- Turn Signals
- Windshield and Side Windows
- Rearview Mirrors

Night Driving Checklist

The Driver

- Clean Glasses
- Don't Wear Sunglasses
- Get Eyes Checked
- Be Rested

The Roadway

- Plan Your Route
- Plan Your Rest Stops
- Know Where Nighttime Hazards Are I.E., Ramps, Taverns
- Be Extra Careful on Unfamiliar Roads

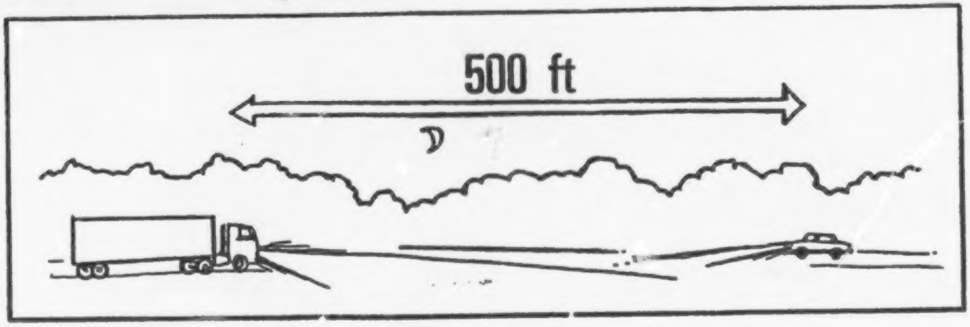
The Vehicle

- Perform Pretrip Inspection
- Check All Lights
- Use Flashlights

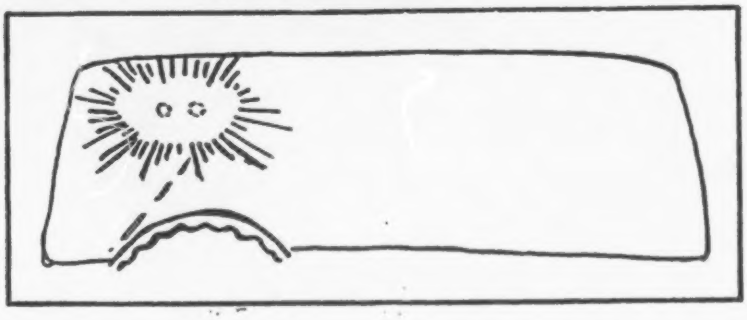
Visual 5

Night Driving Procedures

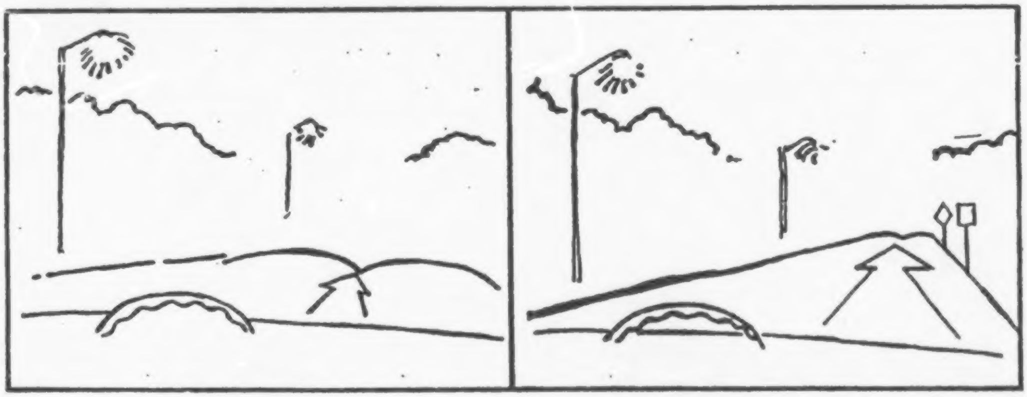
Avoid Blinding Others



Avoid Being Blinded



Maximize Illumination



Low Beams High Beams

2-1

Night Driving Adjustments

Communicating

- Signal Intent Early
- Signal Presence

Following Distance

- More Time to React
- Less Headlight Glare

Speed

- Sight Distance
- Control

S[illegible]ION: II

SUBJECT: Extreme Driving Conditions

TIME ALLOTTED: 25 Min.

PAGE: 2 - 6A

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizes and adapts to extreme driving conditions.	1.A. Driving in winter a. Vehicle checks b. Coolant level and anti-freeze amounts c. Defrosting and heating equipment d. Wipers and washers e. Tires f. Tire chains g. Lights and reflectors h. Windows and mirrors i. Handholds and steps deck plates j. Radiator shutters and winter fronts k. Exhaust systems	1.A. Lecture - Commercial Driver's Manual 2-29, 2-30 Overhead Transparencies 1.A. 2.6-30 (List All)	1. Asking factual and specific questions.
	1.B. Driving on slippery surfaces a. Start gently and slowly b. Adjust turning and braking to conditions c. Adjust space to conditions d. Wet brakes	1.B. Lecture - Commercial Driver's Manual - 2-30 Overhead transparencies 1.B a-c 2.6-32 1.B 2.6-35 (all)	
	1.C. Driving in very hot weather a. Vehicle checks b. Tires c. Engine Oil d. Engine Coolant e. Engine belts f. Engine hoses	1.C. Lecture - Commercial Driver's Manual - 2-31, 2-32 Overhead Transparencies 1.C 2.6-30 (all) 1.C 2.6-37 (all)	

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
	g. Watch for bleeding tar h. Go slowly enough to prevent overheating		
	1.D. Mountain Driving a. Use of gears going downhill and uphill b. Proper brake c. New equipment versus old equipment d. Escape ramps	1.D. Lecture - Commercial Driver's Manual 2-33, 2-34 Overhead Transparencies 1.D. 2.6-30, 2.6-38 (all)	
			2. Proficiency Test.

SESSION II

EXTREME DRIVING CONDITIONS

Objective

Recognizes and adapts to extreme driving conditions.

Topic(s)

1. Driving in winter.
2. Vehicle checks.
3. Coolant level and antifreeze amounts.
4. Defrosting and heating equipment.
5. Wipers and washers.
6. Tires.
7. Tire chains.
8. Lights and reflectors.
9. Windows and mirror.
10. Handholds and step deck plates.
11. Radiator shutters and winter fronts.
12. Exhaust systems.
13. Driving on slippery surfaces.
14. Start gently and slowly.
15. Adjust turning and braking to conditions.
16. Adjust space to conditions.
17. Wet brakes.
18. Driving in very hot weather.
19. Vehicle checks.
20. Tires.
21. Engine Oil.
22. Engine Coolant.
23. Engine belts.
24. Engine hoses.
25. Watch for bleeding.
26. Go slowly enough to prevent overheating.
27. Mountain Driving
28. Use of gears going downhill and uphill.
29. Proper brake.
30. New equipment versus old equipment.
31. Escape ramps.

Techniques/Procedures and Activities

Overhead Transparencies
A 2.6-30 (covered at end of section /relevant to all parts)

Lecture: CDLM 2-29, 2-30, 2-31, 2-32, 2-33, Top 2-34

Make sure your vehicle is ready before driving in winter weather. You should make a regular **pre-trip inspection**, paying extra attention to the following items.

Coolant Level and Antifreeze Amount. Make sure the cooling system is full and there is enough anti-freeze in the system to protect against freezing. This can be checked with a special coolant tester.

Defrosting and heating Equipment. Make sure the defrosters work. They are needed for safe driving. Make sure the heater is working and that you know how to operate it. If you use other heaters and expect to need them (e.g., mirror heaters, battery box heaters, fuel tank heaters), check their operation.

Wipers and Washers. Make sure the windshield wiper blades are in good condition. Make sure the wiper blades press against the window hard enough to wipe the windshield clean. Otherwise they may not sweep off snow properly. Make sure the windshield washer works and there is washing fluid contained in the washer reservoir. Use windshield washer antifreeze to prevent freezing of the washer liquid. If you can´t see well enough while driving (for example, if your wipers fail), stop safely and fix the problem.

Tires. Make sure you have enough tread on your tires. The drive tires must provide traction to push the rig over wet pavement and through snow. The steering tires must have traction to steer the vehicle. Enough tread is especially important in winter conditions. You should have at least **4/32 inch tread depth in every major groove on front wheels and at least 2/32 inch on other wheels.** More would be better. Use a gauge to determine if you have enough tread for safe driving. Federal Law: Vehicles must have like tires on same axle. Do not put radials with bias on same axles.

Tire Chains. You may find yourself in conditions where you can´t drive without chains, even to get to a place of safety. Carry the right number of **chains** and extra cross links. Make sure they will fit **your drive tires.** Check the chains for broken hooks, worn or broken cross links, and bent or broken side chains. Learn how to put the chains on before you need to do it in snow and ice. (N.H. not necessary)

Lights and Reflectors. Make sure the lights and reflectors are clean. Lights and reflectors are especially important during bad weather. Check from time to time during bad weather to make sure they are clean and working right.

Windows and Mirrors. Remove any ice, snow, etc., from the windshield, windows, and mirrors before starting. Use a windshield scraper, snow brush, and windshield defroster as necessary.

Hand Holds, Steps, and Deck Plates. Remove all ice and snow from hand holds, steps, and deck plates which you must use to enter the cab or to move about the vehicle. This will reduce the danger of slipping.

Radiator Shutters and Winterfront. Remove ice from the radiator shutters. Make sure the winterfront is not closed too tightly. If the shutters freeze shut or the winterfront is closed too much, the engine may overheat and stop.

Exhaust System. Exhaust system leaks are especially dangerous when cab ventilation may be poor (windows rolled up, etc.). Loose connections could permit poisonous carbon monoxide to leak into your vehicle. Carbon monoxide gas will cause you to be sleepy. In large enough amounts it can kill you. Check the exhaust system for loose parts and for sounds and signs of leaks. **(5 black lines on coupling dot out of service.)**

Overhead Transparencies
2.6-32
2.6-35

Lecture: CDLM 2-30 (Driving)

Slippery Surfaces. Drive slowly and smoothly on slippery roads. If it is very slippery you shouldn't drive at all. Stop at the first safe place.

The following are some safety guidelines.

Start gently and slowly. When first starting, get the feel of the road. Don't hurry.

Adjust turning and braking to conditions. Make turns as gentle as possible. Don't brake any harder than necessary, and don't use the engine brake or speed retarder. (They can cause the driving wheels to skid on slippery surfaces.)

Adjust speed to conditions. Don't pass slower vehicles unless necessary. Go slow and watch far enough ahead to keep a steady speed. Avoid having to slow down and speed up. Take curves at slower speeds and don't brake while in curves. Be aware that as the temperature rises to the point where ice begins to melt, the road becomes even more slippery. Slow down more.

Adjust space to conditions. Don't drive alongside other vehicles. Keep a longer following distance. When you see a traffic jam ahead, slow down or stop to wait for it to clear. Try hard to anticipate stops early and slow down gradually.

Wet Brakes. When driving in heavy rain or deep standing water, your brakes will get wet. Water in the brakes can cause the brakes to be weak, to apply unevenly, or to grab. This can cause lack of braking power, wheel lockups, pulling to one side or the other, and jackknife if you pull a trailer.

Avoid driving through deep puddles or flowing water if possible. If not, you should:

-- Slow down.
-- Place transmission in a low gear.
-- Gently put on the brakes. This presses linings against brake drums or discs and keeps mud, salt, sand, and water from getting in.
-- Increase engine RPM and cross the water while keeping light pressure on the brakes.
-- When out of the water, maintain light pressure on the brakes for a short distance to heat them up and dry them out.
-- Make a test stop when safe to do so. Check behind to make sure no one is following, then apply the brakes to be sure they work right. If not, dry out further as described above. (CAUTION: Do not apply too much brake pressure and accelerator at the same time or you can overheat brake drums and linings.)

Visual 1

Special Adverse Weather Checklist For Pretrip Inspection

- Antifreeze
- Heater/Defroster
- Wipers/Washers
- Tires
- Chains
- Brakes
- Lights
- Windows, Mirrors, and Reflectors
- Hand and Toe Holds
- Radiator Shutters
- Exposed Wiring and Hoses
- Fuel Tank
- Muffler and Exhaust System
- Fifth Wheel
- Personal Gear and Supplies
- Weather Reports—Road Conditions

Checklist for Operating on Slippery Surfaces

Trip Time on Icy Road Will Take Longer

- Start Gently
- Adjust Turning and Braking to Conditions
- Check Mirrors
- Adjust Speed to Conditions
- Adjust Space to Conditions
- Avoid Wet Brakes

Overhead Transparencies:
C 2.6-30
2.6-37

Lecture: CDLM 2-31 **(Very Hot Weather)**

Do a normal pre-trip inspection but pay special attention to the following items.

Tires. Check the tire mounting and air pressure. **Inspect the tires every two hours or every 100 miles when driving in very hot weather.** Air pressure increases with temperature. Do not let air out or the pressure will be too low when the tires cool off. **If a tire is too hot to touch, remain stopped until the tire cools off.** Otherwise the tire may blow out or catch fire. **Pay special attention to recapped or retreaded tires. Under high temperatures the tread may separate from the body of the tire.**

Engine Oil. The engine oil helps keep the engine cool, as well as lubricating it. Make sure there is enough engine oil. If you have an oil temperature gauge, make sure the temperature is within the proper range while you are driving.

Engine Coolant. Before starting out, make sure the engine cooling system has enough water and antifreeze according to the engine manufacturer's directions. (Antifreeze helps the engine under the conditions as well as cold conditions.) When driving, check the water temperature or coolant temperature gauge from time to time. Make sure that it remains in the normal range. If the gauge goes above the highest safe temperature, there may be something wrong that could lead to engine failure and possibly fire. Stop driving as soon as safely possible and try to find out what is wrong.

Some vehicles have sight glasses or see-through coolant overflow containers or coolant recovery containers. These permit you to check the coolant level while the engine is hot. If the container is not part of the pressurized system, the cap can be safely removed and coolant added even when the engine is at operating temperature. **Never remove the radiator cap or any part of the pressurized system until the system has cooled.** Steam and boiling water can spray under pressure and cause severe burns. If you can touch the radiator cap with your bare hand, it is probably cool enough to open.

If coolant has to be added to a system without a recovery tank or overflow tank, follow these steps.

-- **Shut engine off.**
-- **Wait until engine has cooled.**
-- **Protect hands (use gloves or a thick cloth).**
-- **Turn radiator cap slowly to the first stop, which releases the pressure seal.**
-- **Step back while pressure is release from cooling system.**
-- **When all pressure has been released, press down on the cap and turn it further to remove it.**
-- **Visually check level of coolant and add more coolant if necessary.**
-- **Replace cap and turn all the way to the closed position.**

Engine Belts. Learn how to check V-belt tightness on your vehicle by pressing on the belts. Loose belts will not turn the water pump and/or fan properly. This will result in overheating. Also check belts for cracking, or other signs of wear. **(1" play)**

Hoses. Make sure coolant hoses are in good condition. A broken hose while driving can lead to engine failure and even fire.

Watch for Bleeding Tar. Tar in the **road pavement frequently rises to the surface** in very hot weather. Spots where tar "bleeds" to the surface are very slippery.

Go Slow Enough to Prevent Overheating. High speeds create more heat for tires and engine. In desert conditions the heat may build up to the point where it is dangerous. The heat will increase chances of tire failure, or even fire, and engine failure.

Visual 1

Special Adverse Weather Checklist For Pretrip Inspection

- Antifreeze
- Heater/Defroster
- Wipers/Washers
- Tires
- Chains
- Brakes
- Lights
- Windows, Mirrors, and Reflectors
- Hand and Toe Holds
- Radiator Shutters
- Exposed Wiring and Hoses
- Fuel Tank
- Muffler and Exhaust System
- Fifth Wheel
- Personal Gear and Supplies
- Weather Reports—Road Conditions

Checklist for Hot Weather Operation

Check

- Tires
- Lubrication
- Cooling System
- Belts
- Hoses

Adjust

- Watch for Flash Flood Conditions in Desert
- Watch for Bleeding Tar
- Avoid High Speed Conditions
- Stay With Vehicle

verhead Transparencies
2.6-30
2.6-38

Lecture: CDLM, Page 2-33 (Mountain Driving)

In mountain driving, the force of gravity plays a major role. If you have a heavy load, you will have to use **lower gears** and go **slower to climb hills.** In coming down steep hills, gravity will tend to speed you up. You **must go slow** enough that **your brakes can hold you back without getting too hot.** If the brakes become too hot, they may start to "fade". This means that you have to apply them harder and harder to get the same sopping power. If the brakes continue to be used hard, they can continue to fade until you can´t slow down or stop at all. These dangers can be avoided by going slow when going downhill.

No matter what the size of your vehicle, going down long, steep grades can cause your brakes to fail if you go too fast. Using lower gears will help you keep from going too fast. Lower gears allow engine compression and friction to help slow the vehicle. This is true whether you have an automatic transmission or a manual transmission.

If you do have a large vehicle with a manual transmission, don´t ait until you have started down the hill to shift down. You ight get hung up in neutral and would lose the benefit of engine braking. You would find yourself coasting, which would be illegal and dangerous. **Be in the right gear before starting down the hill.**

With older trucks, a rule for choosing gears was to use the same gear going down a hill that you would need to climb the hill. However, new trucks have low friction parts and streamlined shapes for fuel economy. They may also have more powerful engines. This means they can go up hills in higher gears and have less friction and air drag to hold them back going down hills. For that reason, drivers of modern trucks may have to use **lower gears going down** a hill than would be required to go up the hill. Find out what is right for your vehicle.

When going down hill, brakes will always heat up. They are designed so brake shoes or pads rub against the brake drum or disks to slow the vehicle, which creates heat. Brakes are designed to take a lot of heat. However, brakes can be made to fail from excessive heat by attempting to slow down from too high a speed too many times or too quickly. Brakes will fade (have less stopping power) when they get very hot, and they can get to the point where they will no longer slow the vehicle.

The right way to use your brakes for long downhill grades is to o slow enough that a fairly light use of the brakes will keep our speed from increasing. If you go slow enough, the brakes will be able to get rid of the heat and they won´t get too hot.

Some people believe that letting up on the brakes from time to time will allow them to cool enough so they don´t become overeated. **Tests have proven this is not true.** Brake drums cool very slowly, so the amount of cooling between applications is not enough to prevent overheating. This type of braking requires heavier brake pressures than steady application does. Heavy pressure on the brakes from time to time builds up more heat than light continuous pressure does. Therefore, select the right **gear, go slow enough, and maintain a lighter, steadier use of the brakes.**

Escape ramps have been built on many steep mountain grades. Escape ramps are made to stop runaway vehicles safely without injuring drivers and passengers. Escape ramps use a long bed of loose soft material (pea gravel) to slow a runaway vehicle, sometimes in combination with an upgrade. Always use an escape ramp if you lose your brakes. Be aware of their location on your route.

Visual 1

Special Adverse Weather Checklist For Pretrip Inspection

- Antifreeze
- Heater/Defroster
- Wipers/Washers
- Tires
- Chains
- Brakes
- Lights
- Windows, Mirrors, and Reflectors
- Hand and Toe Holds
- Radiator Shutters
- Exposed Wiring and Hoses
- Fuel Tank
- Muffler and Exhaust System
- Fifth Wheel
- Personal Gear and Supplies
- Weather Reports—Road Conditions

Checklist for Mountain Driving

Upgrades

- Downshift Until You Find Gear That Will Maintain RPM's
- Position Vehicle in Right Lane
- Don't Pass

Downgrades

- Never Downshift While Descending
- Place Vehicle in Same Gear Used to Ascend Grade or Better Yet a Lower One
- Let Drive Train Assist in Controlling Downhill Speed
- Maintain Steady Brake Pressure–Don't "Fan" Brakes
- Watch Air Brake Pressure

ESSION: II
SUBJECT: Hazard Perception
TIME ALLOTTED: 25 Min.
PAGE: 2 - 7

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognize and interpret specific facts related to hazard perception.		Lecture-Commercial Driver's Manual A.-C. - 2-34, 2-35, 2-36, 2-37	1. Asking factual and specific questions.
	1.A. Seeing hazards	1.A. Overhead Transparencies 2.1-15	
	1.B. Hazardous roads	1.B. Overhead Transparencies 2.1-17, 3.1-25, 3.1-26	
	1.C. Drivers who are hazards	1.C. Overhead Transparencies 3.1-27	
			2. Proficiency Test.

SESSION II

HAZARD PERCEPTION

Objective

Recognize and interpret specific facts related to hazard perception.

Topic(s)

1. Seeing hazards.
2. Hazardous roads.
3. Drivers who are hazards.

Techniques/Procedures and Activities

Overhead Transparencies
2.1-15

Lecture: CDLM 2-34, 2-35, 2-36, 2-37

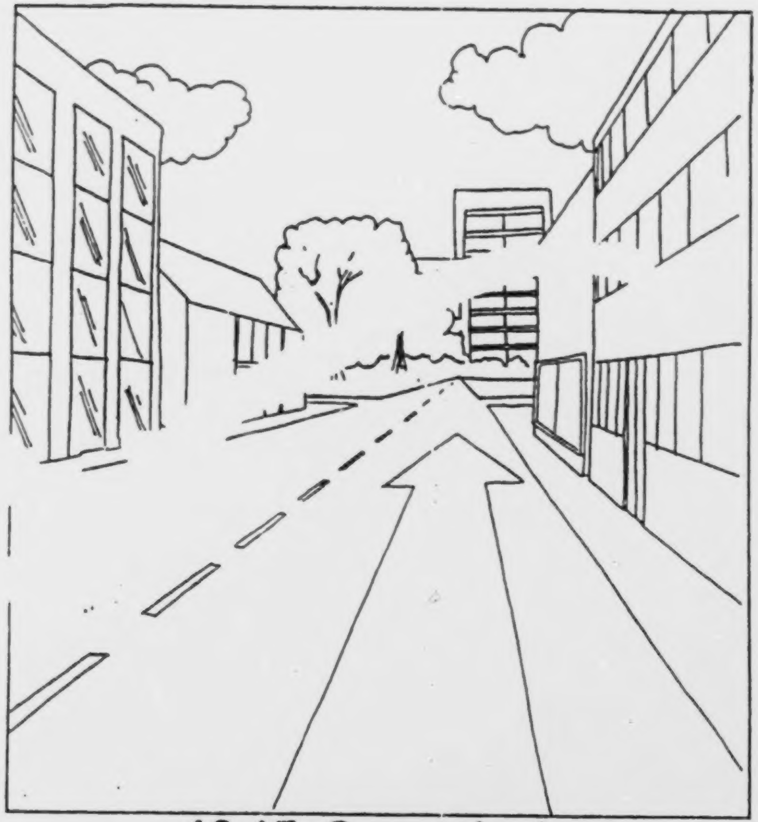
What is a Hazard? A hazard is any road condition or other road user (driver, bicyclist, pedestrian) that is a possible danger. For example, a car in front of you is headed towards the freeway exit, but his brake lights come on and he begins braking hard. This could mean that the driver is uncertain about taking the offramp. He might suddenly return to the highway. This car is a hazard. If the driver of the car cuts in front of you, it is no longer just a hazard; it is an emergency.

Seeing Hazards Lets You Be Prepared. You will have more time to act if you see hazards before they become emergencies. In the example above, you might make a lane change or slow down to prevent a crash if the car suddenly cuts in front of you. Seeing this hazard gives you time to check your mirrors and signal a lane change. **Being prepared reduces the danger.** A driver who did not see the hazard until the slow car pulled back on the highway in front of him would have to do something very suddenly. Sudden braking or a quick lane change is much more likely to lead to a crash.

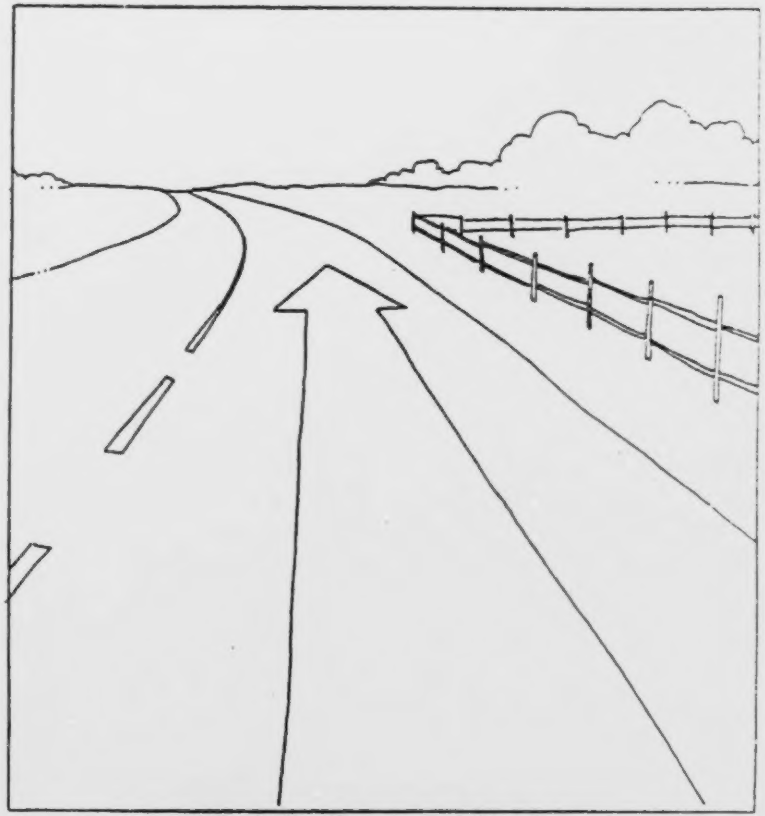
Learning to See Hazards. There are often clues that will help you see hazards. The more you drive, the better you can get at seeing hazards. This section will talk about hazards that you should be aware of.

Seeing Ahead

Visual 1



10-15 Seconds Is
About One Block



10-15 Seconds Is
About a Quarter-Mile

2-1

Overhead Transparencies
2.1-17
3.1-25
3.1-26

Lecture: **CDLM, Page 2-34 (Hazardous Roads)**

Slow down and be very careful if you see any of the following road hazards.

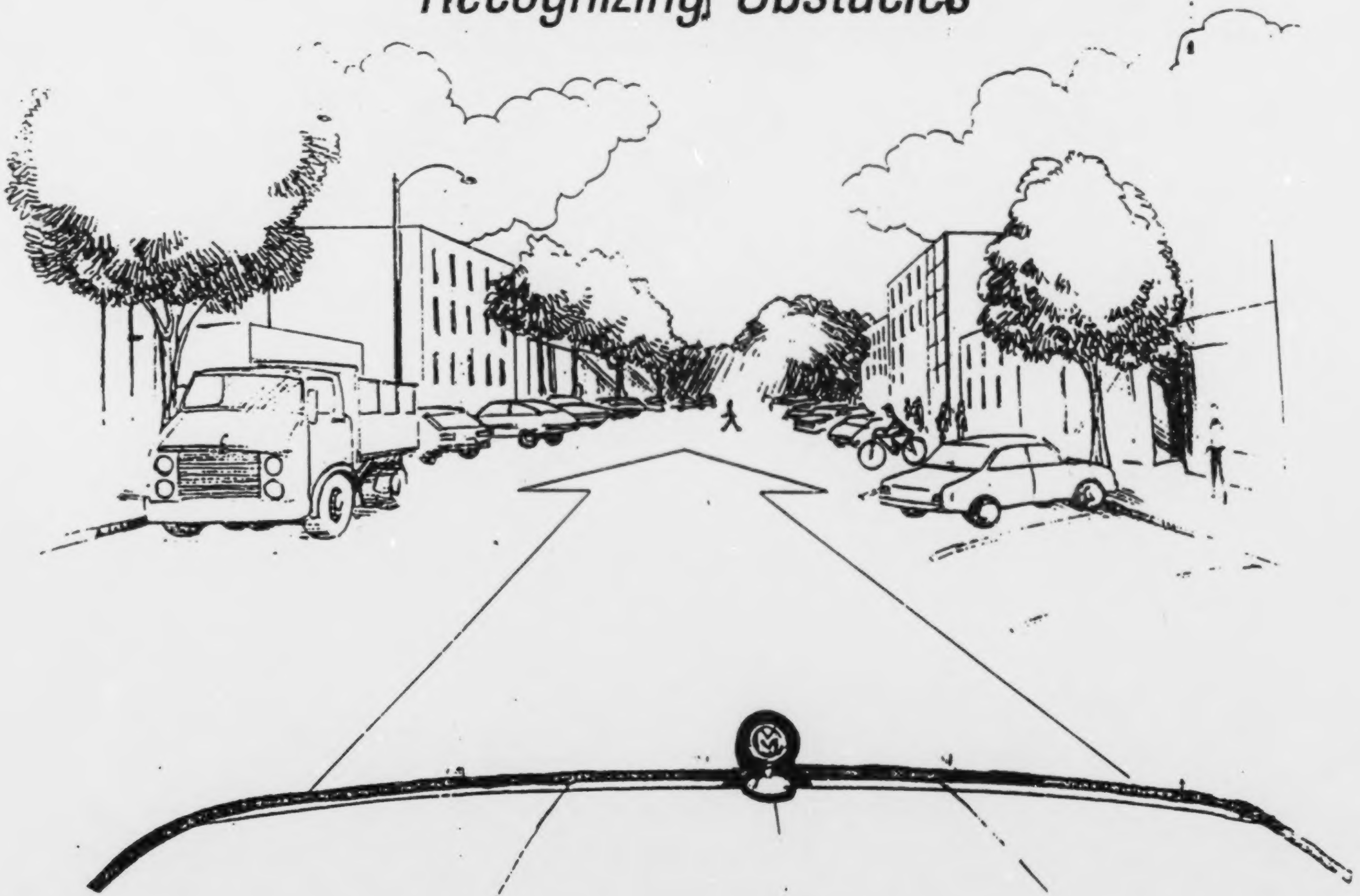
Work Zones. When people are working on the road it is a hazard. There may be narrower lanes, sharp turns, or uneven surfaces. Other drivers are often distracted and drive unsafely. Workers and construction vehicles may get in the way. Drive slowly and carefully near work zones. Use your 4-way flashers or brake lights to warn drivers behind you.

Drop Off. Sometimes the pavement drops off sharply near the edge of the road. Driving too near the edge can tilt your vehicle toward the side of the road. This can cause the top of your vehicle to hit roadside objects (signs, tree limbs). Also, it can be hard to steer as you cross the drop off, going off the road or coming back on.

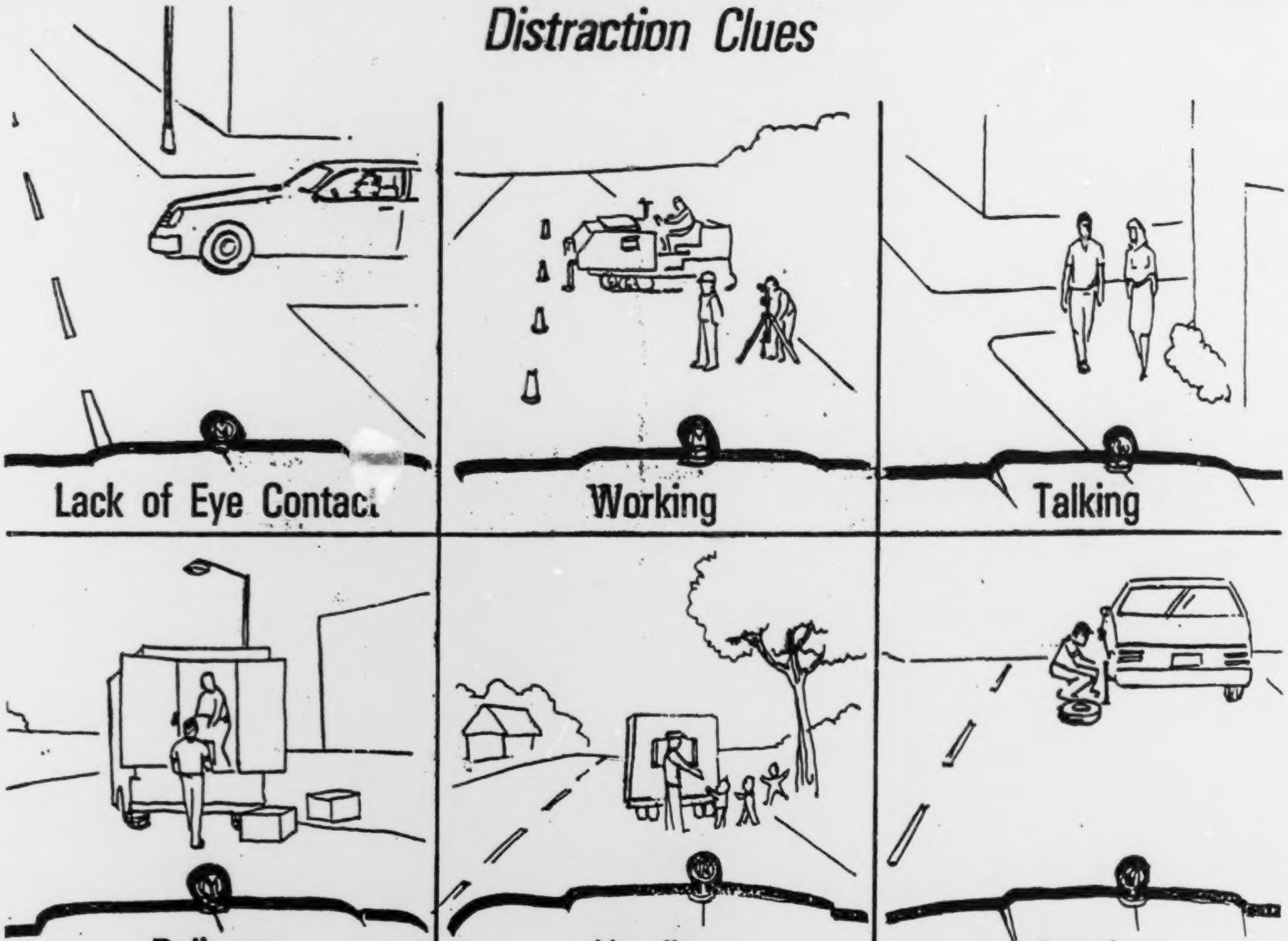
Foreign Objects. Things that have fallen on the road can be hazards. They can be a danger to your tires and wheel rims. They can damage electrical and brake lines. They can be caught between dual tires and cause severe damage. Some obstacles which appear to be harmless can be very dangerous. For example, cardboard boxes may be empty, but they may also contain some solid or heavy material capable of causing damage. The same is true of paper and cloth sacks. It is important to remain alert for objects of all sorts, so you can see them early enough to avoid them without making sudden, unsafe moves.

Offramps/Onramps. Freeway and turnpike exits can be particularly dangerous for commercial vehicles. Offramps and onramps often have speed limit signs posted. **Remember, these speeds may be safe for automobiles, but may not be safe for larger vehicles or heavily loaded vehicles.** Exits which go downhill and turn at the same time can be especially dangerous. The downgrade makes it difficult to reduce speed. Braking and turning at the same time can be a dangerous practice. Make sure you are going slow enough before you get on the curved part of an offramp or onramp.

Problem-Solving Exercise: Number One
Recognizing Obstacles



Distraction Clues



Lack of Eye Contact

Working

Talking

Delivery

Vending

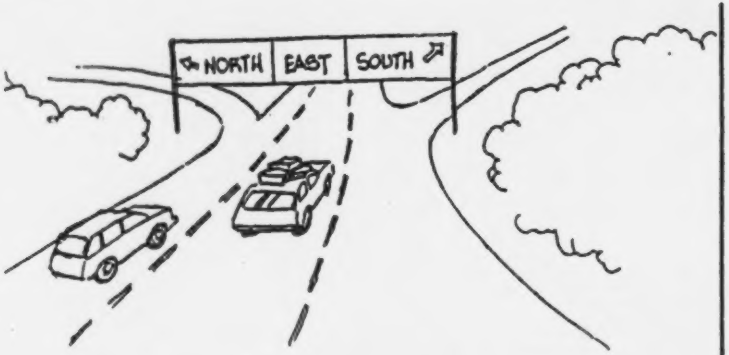
Repair

3.1-25

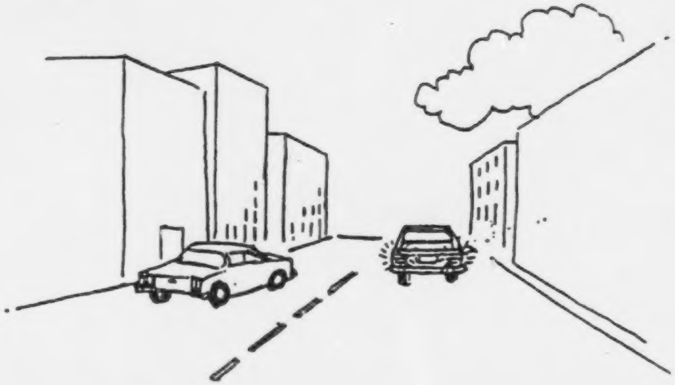
Visual 5

2-17
3-18

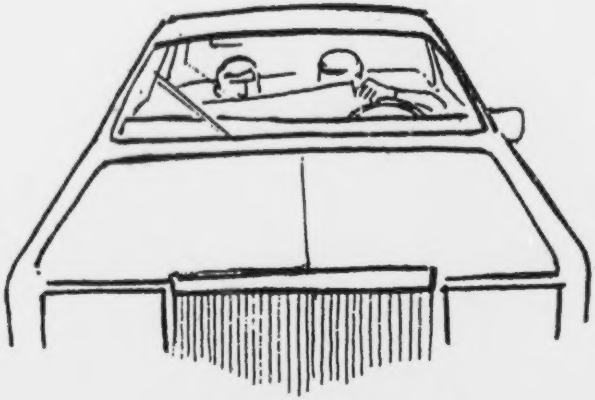
Confusion Clues


NORTH
EAST
SOUTH

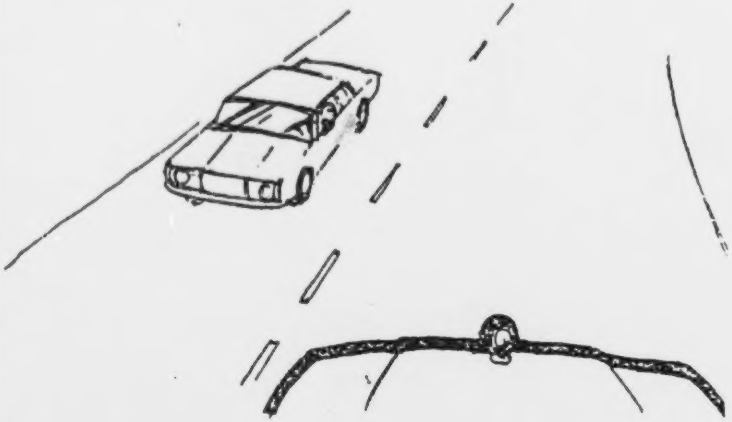
Tourists



Unexplainable Maneuvers



Hesitation



Destination Seeking

Overhead Transparency
3.1-27

Lecture: **CDLM, Page 2-35 (Drivers Who Are Hazards)**

In order to protect yourself and others, you must know when other drivers may do something hazardous. Some clues to this type of hazard are discussed below:

Blocked Vision. People who can't see others are a very dangerous hazard. Be alert for drivers whose vision is blocked. Vans, **loaded station wagons**, and cars with the **rear window blocked** are examples. **Rental trucks** should be watched carefully. Their drivers are often not used to the limited vision they have to the sides and rear of the truck. In winter, vehicles with frosted, ice covered, or snow covered windows are hazards.

Vehicles may be partly hidden by blind intersections or alleys. If you only can see the rear or front end of a vehicle but not the driver, then he or she can't see you. Be alert because he/she may back out or enter into your lane. Always be prepared to stop.

Delivery trucks can present a hazard. The driver's vision is often blocked by packages, or vehicle doors. Drivers of step vans, postal vehicles, and local delivery vehicles often are in a hurry and may suddenly step out of their vehicle or drive their vehicle into the traffic lane.

Parked vehicles can be hazards, when the people start to get out. Or, they may suddenly start up and drive into your way. Watch for movement inside the vehicle or movement of the vehicle itself that shows people are inside. Watch for brake lights or backup lights, exhaust, and other clues that a driver is about to move.

Be careful of a stopped bus. Passengers may cross in front of or behind the bus, and they often can't see you.

Pedestrians and bicyclists can also be hazards. Walkers, joggers and bicyclists may be on the road with their back to the traffic, so they can't see you. Sometimes, they wear portable stereos with head sets, so they can't hear you either. This can be dangerous. On rainy days, pedestrians may not see you because of hats or umbrellas. They may be hurrying to get out of the rain and may not pay attention to the traffic.

Distractions. People who are distracted are hazards. Watch for where they are looking. If they are looking elsewhere, they can't see you. But be alert even when they are looking at you. They may believe that they have the right of way.

Children. Children tend to act quickly without checking traffic. Children playing with one another may not look for traffic and are a serious hazard.

Talkers. Drivers or pedestrians talking to one another may not be paying close attention to the traffic.

Workers. People working on or near the roadway are a hazard clue. The work creates a distraction for other drivers and the workers themselves may not see you.

Ice cream truck. Someone selling ice cream is a hazard clue. Children may be nearby and may not see you.

Disabled vehicle. Drivers changing a tire or fixing an engine often do not pay attention to the danger that roadway traffic is to them. They are often careless. Jacked up wheels or raised hoods are hazard clues.

Accidents. Accidents are particularly hazardous. **People** involved in the **accident** may not look for traffic. **Passing drivers tend to look at the accident.** People often run across the road without looking. Vehicles may slow or stop suddenly.

Shoppers. People in and around shopping areas are often not watching traffic because they are looking for stores or looking into store windows.

Confused Drivers. Confused drivers often change direction suddenly or stop without warning. Confusion is common near freeway or turnpike interchanges and major intersections. Tourists unfamiliar with the area can be very hazardous. Clues to tourists include cargo luggage and **out-of-state license plates.** Unexpected actions (stopping in the middle of a block, changing lanes for no apparent reason, backup lights suddenly going on) are clues to confusion. Hesitation is another clue, including driving very slowly, using brakes often, or stopping in the middle of an intersection. You may also see drivers who are looking at street signs, maps, and house numbers. These drivers may not be paying attention to you.

Slow Drivers. Motorists who fail to maintain normal speed are hazards. Seeing slow moving vehicles early can prevent a crash. Some vehicles by their nature are slow and seeing them is a hazard clue (mopeds, farm machinery, construction machinery, tractors, etc.). Some of these will have the "slow moving vehicle" symbol to warn you. This is a red triangle with an orange center. Watch for it.

Drivers signaling a turn may be a hazard. Drivers signaling a turn may slow more than expected or stop. If they are making a tight turn into an alley or driveway they may go very slow. If they are blocked by pedestrians or other vehicles they may have to stop on the roadway. Vehicles turning left may have to stop oncoming vehicles.

Drivers in a Hurry. Drivers may feel your commercial vehicle is preventing them from getting where they want to go on time. Such drivers may pass you without a safe gap in the oncoming traffic, cutting too close in front of you. Drivers entering the road may pull in front of you in order to avoid being stuck behind you, causing you to brake. Be aware of this and watch for drivers who are in a hurry.

Impaired Drivers. Drivers who are sleepy, have had too much to drink, on drugs, or who are ill are hazards. Some clues to these drivers are:

- **Weaving across the road or drifting from one side to another.**
- **Leaving the road (dropping right wheels onto the shoulder, or bumping across a curb in a turn).**
- **Stopping at the wrong time (stopping at a green light, or waiting for too long at a stop).**
- **Open window in cold weather.**
- **Speeds up or slows down suddenly, driving too fast or too slow.**

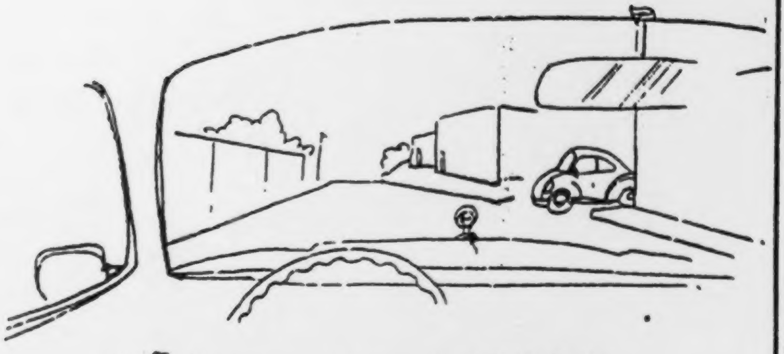
Be alert for drunk drivers and sleepy drivers late at night.

Driver Body Movement As A Clue. Drivers look in the direction they are going to turn. **You may sometimes get a clue from a driver's head and body movements that a driver may be going to make a turn even though the turn signals aren't on.** Drivers making over-the-shoulder checks may be going to change lanes. These clues are most easily seen in motorcyclists and bicyclists. Watch other road users and try to tell whether they might do something hazardous.

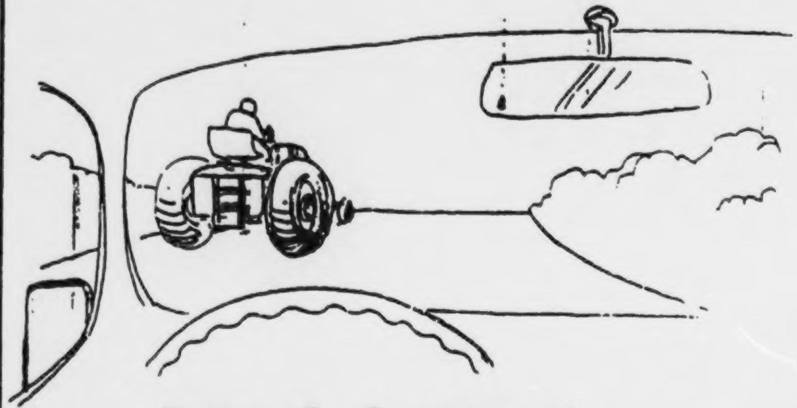
Conflicts. You are in conflict when you have to change speed and/or direction to avoid hitting someone. Conflicts occur at intersections where vehicles meet, at merges (such as turnpike onramps) and where there are needed lane changes (such as the need of a lane, forcing a move to another lane of traffic). Other situations include slow moving or stalled traffic in a traffic lane, and accident scenes. **Watch for other drivers who are in conflict because they are a hazard to you.** When they react to this conflict, they may do something that will put them in conflict with you.

You should always be looking for hazards. Continue to learn to see hazards on the road. However, don't forget why you are looking for the hazards: they may turn into **emergencies**. You look for the hazards in order to have time to **plan a way out of any emergency**. When you see a hazard, think about the emergencies that could develop and figure out what you would do. Always be prepared to take action based on your plans. In this way, you will be a prepared, defensive driver who will improve not only your own safety but the safety of all road users.

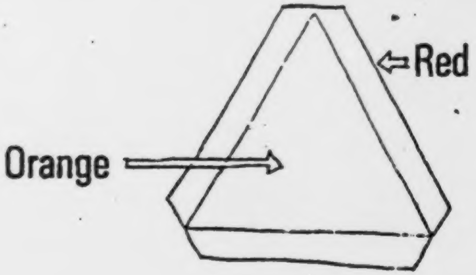
Low Speed Clues



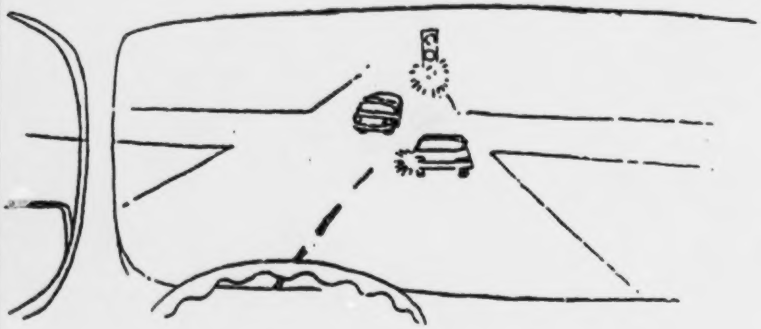
Underpowered Vehicles



Farm & Construction



Slow Moving Vehicle Emblem



Turning Vehicle

3.1-27

Visual 7

SESSION: II

SUBJECT: Test Taking Skills

TIME ALLOTTED: 20 Min.

PAGE: 2 - 8

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Show the content for Session II Test-taking Skills.	1. Content for Session II Test-taking Skills.	Overhead Transparency Content Session II	Asking factual and specific questions.
2. Redefine strategies for test taking.	2. A. General Test-taking strategies	2. A. Lecture-text from manual A. Overhead Transparency General TT start	Proficiency Test
3. Understanding use of key words	3. Use of key words in test taking	3. A. Lecture-test from manual B. Overhead Transparency C. Sample test handout	
4. Define multiple choice tests	4. Attacking multiple choice items	4. A. Lecture B. Overhead Transparency	
5. Understanding how to pick the best answer	5. Selecting the best answer	5. A. Lecture-test from manual B. Sample handout	

** **INSTRUCTORS NOTE**
WATCH THE TIME!!!!!

SESSION II

LESSON 8.1 CONTENT OF TEST TAKING
Title

Overview

Time Allotted:

Prerequisites:

Purpose: Show and discuss the material to be covered in Session II

Materials

Instructional Aids: Overhead Transparency

Student Materials:

Instructor Materials:

Content

Activity or Topic Approximate Time

Discuss content for Session II Test Taking.

SESSION II

1. REDEFINE STRATEGIES FOR TEST TAKING SKILLS
2. UNDERSTANDING USE OF KEY WORDS
3. DEFINE MULTIPLE CHOICE TESTS
4. UNDERSTANDING HOW TO PICK THE BEST ANSWER

SESSION II

LESSON 8.2 REDEFINE STRATEGIES FOR TEST TAKING SKILLS
Title

Overview

Time Allotted:

Prerequisites: Recap Session I, Visual Search, Communication, Space Management, Night Operation, Extreme Driving Conditions and Hazard Perception

Purpose: Review Strategies for Test Taking Skills

Materials

Instructional Aids: Overhead Transparencies

Student Materials:

Instructor Materials: Text

Content

Activity or Topic	Approximate Time
Discussion of basic strategies for taking multiple choice exams.	

GENERAL TEST-TAKING STRATEGIES

A. TIME-USING STRATEGIES

1. Set up a schedule for progressing through the test.
2. Work as rapidly as possible with reasonable assurance of accuracy.
3. Answer the easiest questions first.
4. On scrap paper, keep a record of the items to which you would like to go back.
5. Use time remaining after completion of the test to go back and look at your answers.

B. ERROR-AVOIDANCE STRATEGIES

1. Pay careful attention to directions. Determine the nature of the task.
2. Determine the nature of the question.
3. Ask the examiner for clarification, when necessary, if it is permitted.
4. If you are using a separate answer sheet, make sure to record the answer in the correct position on the sheet.

C. GUESSING STRATEGY

Don't make wild guesses. Many times you can get the correct answer by a process of reasoning and eliminating wrong answers.

D. MISCELLANEOUS TIPS

1. Only change an answer if you are sure the first one you picked was wrong.
2. Examine carefully all possible responses before attempting to choose the correct answer.
3. Use relevant content information provided in other test items.
4. Tackle items one at a time rather than thinking about the whole test.
5. Do not expect to find a pattern in the positions of the correct choices.

SESSION II

LESSON 8.3 USE OF KEY WORDS IN TEST TAKING
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To understand the use of key words in test taking.

Materials

Instructional Aids: Overhead Transparency

Student Materials: Sample Test

Instructor Materials: Text

Content

Activity or Topic	Approximate Time

Lecture: There are key words to look for when answering test questions. Who means to look for a person. What means to look for a description or a thing. When means to look for the time or sequence in which something happened. Where means to look for a place. Why means to look for the reason something happened.

Give out sample test on text.

ANSWERING QUESTIONS THAT ASK WHO, WHAT, WHEN, WHERE, and WHY

There are key words to look for when answering test questions. Usually, **who** means to look for a person. **What** means to look for a description or a thing. **When** means to look for the time or sequence in which something happened. **Where** means to look for a place. **Why** means to look for the reason something happened.

DIRECTIONS: Circle the letter which matches the answer you choose.

1. The key word **where** asks for a ______.

time	place	thing	reason
A	B	C	D

2. Usually, the key word **who** asks for a ______.

reason	time	place	person
A	B	C	D

3. The key word **when** asks for a ______.

time	person	thing	place
A	B	C	D

4. The key word **why** asks for a ______.

place	thing	person	reason
A	B	C	D

5. The key word **what** asks for a ______.

time	place	thing	reason
A	B	C	D

SESSION II

LESSON 8.4 ATTACKING MULTIPLE CHOICE TESTS
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To show how to best answer multiple choice tests.

Materials

Instructional Aids: Overhead Transparency (Pg. 188)

Student Materials: Handout (Pg. 188)

Instructor Materials: Text

Content

Activity or Topic	Approximate Time

Lecture:

MULTIPLE CHOICE. These types of tests are easy because the answer is always one of the choices and through elimination you should be able to figure out which one. A common mistake people make is to choose the first statement that seems right without reading the rest. The object of multiple choice tests is to choose the **best** answer from several statements.

ATTACKING MULTIPLE CHOICE ITEMS

Many tests contain multiple choice questions. These questions offer you four or five possible answers. Your job is to select the best answer. Wrong answers are often partly correct. These partly-true choices are inserted to force you to think and work carefully.

USE THESE METHODS TO ANSWER MULTIPLE CHOICE QUESTIONS CORRECTLY:

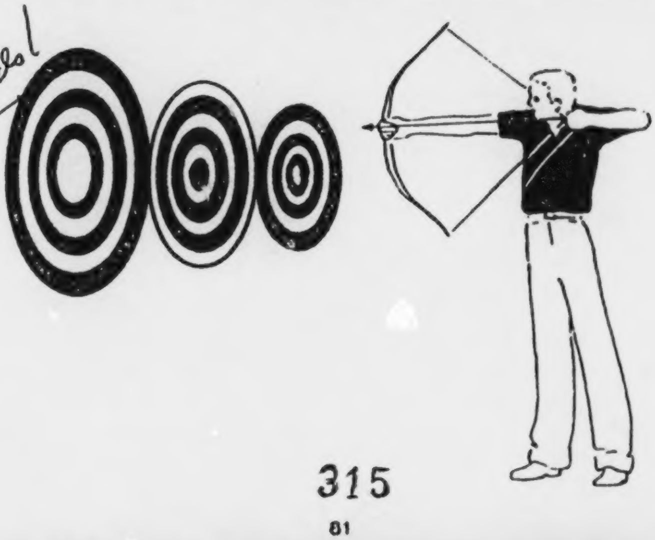
1. Read the question carefully. Identify the **key-phrase** in the question.
2. Mentally reject answers that are clearly wrong; concentrate on the remaining answers. The more answers you eliminate in this way, the better chance you have of answering the question correctly.
3. If several answers are plausible, use key words to help pick the correct answer. (POSSIBLE)
4. If the question is in the form of an incomplete statement, try to complete the statement before you look at the suggested answers. Then see if the way you have completed the statement corresponds with any of the answers provided. If so, that choice is likely to be the correct one.
5. Use your head! Make (shrewd inferences.) With a little thought and the knowledge you have, answers can be reasoned out.

Important

ASK ?

(USE of COMMON SENSE!

instructor explaination for some words!



SESSION II

LESSON 8.5 SELECTING THE BEST ANSWER
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To show how to pick the best answer on multiple choice tests.

Materials

Instructional Aids:

Student Materials: Sample Test - Handout

Instructor Materials:

Content

Activity or Topic	Approximate Time
Lecture: You can see right away that some answers are wrong. Don't take time trying to use the wrong answers. Look at the answers that might be right and pick the answer from those. Pick the answer from the ones that are possible.	
Handout sample test.	
Discussion of sample test.	

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[illegible]

SELECTING THE BEST ANSWER

DIRECTIONS: First choose the best answer. After you identify the answer, circle the letter next to it.

1. **Best** means
   A. as good as any
   B. good looking
   [✓ C.] better than any others
   D. sitting straight

2. **Choose** means to
   [✓ A.] decide which one
   B. look at the menu
   C. put cards in piles
   D. remember a number

3. **Correct** means
   A. full of errors
   B. your report card mark
   [✓ C.] free from mistakes
   D. easiest to read

4. **Identify** means to
   [✓ A.] show which one
   B. wear a badge
   C. write your name
   D. spy

5. **Incorrect** means
   A. a line that is not straight
   B. identify the subject
   C. greater than
   [✓ D.] not right

6. **False** means
   [✓ A.] not true
   B. a fiction story
   C. straight line
   D. being unhappy

7. **Fewer** means
   A. more than
   B. a little child
   C. about the same
   [✓ D.] less in number

8. **Greater** means
   A. a circle
   [✓ B.] larger than
   C. to grind
   D. fewer

9. **Locate** means to
   A. write a report
   B. put in order
   C. see a movie
   [✓ D.] find something

10. **Pick** means to
    A. dig
    [✓ B.] choose
    C. shovel
    D. make a circle

SESSION: II

SUBJECT: Proficiency Test

TIME ALLOTTED: 60 Min.

PAGE: 2 - 9

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
Knowledge of student material covered in this and previous Sessions.	60 questions.	Test questions Answer Sheet	80% passage (Minimum 11) (Allowed ten questions wrong for 80%) 1.7 each

Revised 09/20/89
Revised 10/23/89
Revised 06/11/90

SESSION II

Test 2

Name: ______________________________

___ 1. What are some reasons to check your mirrors?
a) to check cargo
b) to check tires
c) to check rope or chains
d) all of the above

___ 2. When looking for road conditions, are any of these on your list?
a) hills
b) traffic stopped
c) curves
d) all of the above

___ 3. When driving below the minimum posted speed limit, what must a driver do?
a) stay to right side of road
b) put on your right flashers
c) put on your flashers
d) none of the above

___ 4. When you are broken down on an Interstate highway, how long do you have from the time you stop until you are required to put out your triangles?
a) 60 min.
b) 40 min.
c) 20 min.
d) 10 min.

___ 5. Why should you be careful coming out of tunnels?
a) strong winds
b) driving in darkness
c) coming into light again
d) none of the above

___ 6. When dealing with tailgaters, what should you do?
a) avoid quick lane changes
b) increase your following distance
c) don't speed up
d) all of the above

___ 7. While driving at night you could experience which of the following?
a) fatigue
b) poor lighting
c) drunk drivers
d) all of the above

___ 8. Which of these is a good rule to follow when driving at night?
a) keep your speed slow enough to stop within the range of your headlights
b) look directly at oncoming headlights
c) keep your instrument lights bright
d) wear sun glasses

___ 9. Which of these statements about tires and hot weather driving is true?
   a) you should inspect your tires more often
   b) if a tire is too hot to touch, you should drive on it to cool it off
   c) recapped tires are less likely to fail in hot weather than new tires
   d) kissing tires are all right

___ 10. Measured from the road surface, the maximum legal height of any vehicle and load not needing a permit is:
   a) 12 feet 6 inches
   b) 13 feet 6 inches
   c) 14 feet 6 inches
   d) 15 feet 6 inches

___ 11. High beams should:
   a) be used in city driving
   b) be turned on when an oncoming driver does not dim his/her lights
   c) be dimmed when you are within 500 feet of another vehicle
   d) be on at all times

___ 12. Why is it more hazardous to drive a vehicle at night
   a) poor vision
   b) road glare
   c) poor lighting
   d) all the above

___ 13. When are headlights required to be used?
   a) from one half hour after sunset to one half hour before sunrise
   b) from one half hour before sunset to one half hour after sunrise
   c) from one half hour before sunset to one half hour before sunrise
   d) during both the day and night

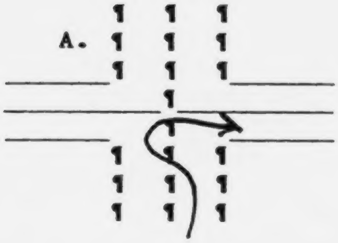
___ 14. When may motive power be disengaged from the drive axle?
   a) when vehicle is nearly stopped
   b) only when vehicle is empty
   c) when driver seeks to reduce noise
   d) when coming down a hill

___ 15. In city driving, how far ahead should you scan when driving a tractor trailer?
   a) one quarter mile
   b) 20 - 25 seconds
   c) one city block
   d) a & c

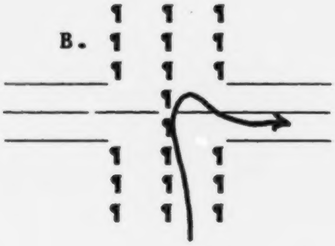
___ 16. What is meant by space management?
- a) controlling all distances around you
- b) controlling to some extent how other vehicles approach you
- c) both of the above
- d) watching other cars

___ 17. You wish to turn right from a two-lane, two-way street to another. Your vehicle is so long that you must swing wide to make the turn. Which of these drawings shows how the turn should be made?

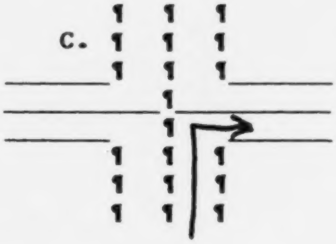
A.



B.



C.



- a) ______
- b) ______
- c) ______
- d) none of the above

___ 18. You "outdrive" your headlights...
- a) when you remove your eyes from the road
- b) when you look across a corner prior to turning
- c) when your stopping distance exceeds your vision
- d) when you are on an Interstate highway

___ 19. When a vehicle is carrying a load at night, which ex tends four feet or more beyond the rear of the body, there must be ___ at the extreme end of the load.
- a) 1 red light
- b) 2 red lights
- c) 1 red flag
- d) 1 flag of any color

___ 20. A general rule of thumb for descending a down grade with the newer aeordynamic trucks, is to.
- a) use same gear as going up the grade.
- b) use one gear lower than when going up the grade.
- c) use one gear higher than when going up the grade.
- d) use two gears higher than when going up the grade.

___ 21. You are traveling down a long, steep hill. Your brakes begin to fade and then fail. What should you do?
- a) downshift
- b) pump the brake pedal
- c) look for an escape ramp or escape route
- d) put on the emergency brake

____ 22. What should you do if your vehicle hydroplanes?
- a) start stab braking
- b) accelerate slightly
- c) release the accelerator
- d) go with the direction of skid

____ 23. A driver's trip log, if required:
- a) may be brought up to date once a week
- b) is also called a "tachograph"
- c) must be shown immediately when an officer requests it
- d) is not needed

____ 24. Brakes can get wet when you drive through a heavy rain. Wet brakes can cause:
- a) wheel lockup
- b) trailer jackknife
- c) both of the above
- d) none of the above

____ 25. When you change lanes what things must you do?
- a) check your mirror to make sure no one is alongside
- b) before you change lanes make sure you have enough room
- c) after you signaled, check that no one has moved out of your blind spot
- d) all of the above

____ 26. When following another vehicle, when are you required to lower your headlights:
- a) within 150'
- b) within 500'
- c) within 1000'
- d) within 200'

____ 27. When broken down on an Interstate or divided highway, where should you place your warning devices?
- a) 10'- 100' behind the vehicle
- b) 10' in front, 100' behind
- c) 10' behind, 100' behind, 200' behind
- d) 100' in front, 10' behind, 100' behind

____ 28. What are tell tail signs of slippery road surfaces?
- a) temperature below 30 degrees
- b) shaded road area
- c) just after rain begins
- d) all of the above

____ 29. Strong winds make it difficult to operate a tractor trailer. Which of the statements are true?
- a) winds make it difficult to stay in your lane
- b) the problem is usually worse for lighter trailers
- c) it can be a problem coming out of tunnels
- d) all of the above

___ 30. Hydroplaning can occur at what speed?
a) 10 mph
b) 20 mph
c) 25 mph
d) 30 mph

___ 31. What is the only thing that can cure fatigue?
a) Stop for coffee
b) 1/2 hour rest
c) driving at night
d) sleep

___ 32. How much tread depth on front tires is required by FMCR and State of NH?
a) 2/32
b) 4/32
c) 6/32
d) 8/32

___ 33. To avoid headlamp glare from oncoming vehicles one should do the following:
a) look directly at the lights
b) look to the left of the lights
c) look slightly to the right at the edge marking if available
d) put on your own high beams

___ 34. How many red reflective triangles should you carry?
a) 2
b) 4
c) 5
d) 3

___ 35. Identify which of the following are road hazards:
a) work zones
b) drop off's
c) foreign objects
d) all of the above

___ 36. When driving in hot weather, to avoid over heating you should:
a) speed up to prevent overheating
b) go slow enough to prevent overheating
c) stop all together
d) stop and check radiator fluid

___ 37. While driving in hot weather you should:
a) check your tires every 2 hours or 100 miles
b) go slow enough to prevent overheating
c) make sure your engine oil is up
d) all of the above

___ 38. If you drive through a puddle you should not:
a) pump brakes
b) slow down
c) make a test stop
d) maintain light steady pressure on brakes

___ 39. In winter driving you should always:
a) clean mirrors thoroughly
b) check to see that you have no exhaust leak
c) make sure shutters are operating properly
d) all of the above

___ 40. While driving in snow you should:
a) reduce speed by 1/3
b) reduce speed by 3/4
c) reduce speed by 1/2
d) reduce speed to a crawl

___ 41. While driving, the space alongside is easier to maintain if:
a) you stay centered in your lane
b) you have your trailer moving back and forth
c) you speed up to get away from others
d) none of the above

___ 42. You are traveling up to 48 miles per hour your total length is 60' you should have:
a) 7 seconds between you and other vehicles
b) 6 1/2 seconds between you and other vehicles
c) 5 seconds between you and other vehicles
d) 8 seconds between you and other vehicles

___ 43. Perception distance at 55 miles per hour is:
a) 5/8 seconds
b) 1/2 seconds
c) 3/8 seconds
d) 3/4 seconds

___ 44. You will loose your CDL for:
a) one year for DWI
b) at least 60 days for 2 serious traffic violations in 3 years
c) for BAC of .04 or higher
d) all of the above

___ 45. Off tracking is:
a) when your front wheels and rear wheels track the same
b) when your front wheel and rear wheels follow a different path
c) none of the above
d) there is no such word

___ 46. On left turns you should:
a) be in the right lane to turn left
b) be as far right to make the turn as possible
c) make sure you have reached the center of the intersection before you start to turn left
d) none of the above

___ 47. The proper placement of your hands on the steering wheeis:
a) 10 o'clock - 2 o'clock
b) 9 o'clock - 2 o'clock
c) 12 o'clock - 12 o'clock
d) 9 o'clock - 3 o'clock

___48. In NH if you drive a 10 wheel dump truck with a 10,001 lb. tag-along you need a:
a) class B
b) class C
c) class D
d) class A

___ 49. In NH you must be 21 to handle Hazmat, you must be ________ to go interstate:
a) 18
b) 19
c) 20
d) 21

___ 50. The formula needed for managing how much space you should have ahead is:
a) 2 seconds for each 10' at 40mph
b) 3 seconds for each 10' at 40mph
c) 1 second for each 10' at 40mph
d) 7 seconds for each 10' at 40mph

___ 51. When taking a test, you should:
a) watch the person next to you for hints
b) begin working as soon as possible and maintain accuracy in marking answers
c) call your mother
d) get a cup of coffee and a sandwich for sustenance

___ 52. The key to taking multiple choice tests is:
a) guess blindly then spend time at the end of the test finding the correct answers
b) eliminate any wrong answers then guess
c) leave any unknown questions blank
d) b and c

___ 53. If directions are not clearly understood, you should:
a) guess
b) ask the teacher
c) avoid admitting it to others
d) avoid asking about directions

____ 54. In order to work as fast as possible, you should:
a) start the test before reading the directions
b) read the directions before starting the test
c) read the directions when you're finished
d) avoid asking questions about the directions

____ 55. Best means:
a) as good as any
b) good looking
c) better than any others
d) sitting straight

____ 56. The key word when asks for a:
a) time
b) person
c) thing
d) place

____ 57. The key word what asks for a:
a) time
b) place
c) thing
d) reason

____ 58. In taking a multiple choice test, your job is to:
a) get done as quickly as possible
b) guess wildly
c) pick the best possible answer
d) take your time

____ 59. In taking a multiple choice test, you should
a) stop reading the answers if you find the correct one
b) read the question carefully and identify the key phrase in the question
c) use the "eenie, meenie, minee" method of guessing
d) a and b

____ 60. You have a better chance of receiving a higher score if you:
a) are tense and anxious
b) "cram" for the test the night before
c) put everything else out of your mind and think only of doing your best
d) arrive late for the test having just driven across the country with no sleep

SESSION I [✓ II] III IV
(Circle Session Number)

Answer Sheet

Name: MASTER

Date: Revised 6/11/90

1. A B C ●
2. A B C ●
3. A B ● D
4. A B C ●
5. ● B C D
6. A B C ●
7. A B C ●
8. ● B C D
9. ● B C D
10. ● ● C D
11. A B ● D
12. A B C ●
13. ● B C D
14. ● B C D
15. A B ● D
16. ● B C D
17. A ● C D
18. A B ● D
19. ● B C D
20. A ● C D
21. A B ● D
22. A B ● D
23. A B ● D
24. A B ● D
25. A B C ●
26. A ● C D
27. A B ● D
28. A B C ●
29. A B C ●
30. A B C ●
31. A B C ●
32. A ● C D
33. A B ● D
34. A B C ●
35. A B C ●
36. A ● C D
37. A B C ●
38. ● B C D
39. A B C ●
40. A B ● D
41. ● B C D
42. ● B C D
43. A B C ●
44. A B C ●
45. A ● C D
46. A B ● D
47. A B C ●
48. A B C ●
49. A B C ●
50. A B ● D
51. A ● C D
52. A ● C D
53. A ● C D
54. A ● C D
55. A B ● D
56. ● B C D
57. A B ● D
58. A B ● D
59. A ● C D
60. A B ● D
61. A B C D
62. A B C D
63. A B C D
64. A B C D
65. A B C D
66. A B C D
67. A B C D
68. A B C D
69. A B C D
70. A B C D
71. A B C D
72. A B C D
73. A B C D
74. A B C D
75. A B C D
76. A B C D
77. A B C D
78. A B C D
79. A B C D
80. A B C D
81. A B C D
82. A B C D
83. A B C D
84. A B C D
85. A B C D
86. A B C D
87. A B C D
88. A B C D
89. A B C D
90. A B C D
91. A B C D
92. A B C D
93. A B C D
94. A B C D
95. A B C D
96. A B C D
97. A B C D
98. A B C D
99. A B C D
100. A B C D
101. A B C D
102. A B C D
103. A B C D

TEST II REFERENCE

1. 2-16/17
2. 2-16
3. 2-17/18
4. 2-18
5. 2-24
6. 2-24
7. 2-27
8. 2-28
9. 2-31
10. SL
11. 2-28
12. 2-34
13. State Law
14. Information
15. 2-16
16. 2-23
17. 2-25
18. 2-28
19. 3-3
20. 2-33
21. 2-40
22. 2-21
23. Information
24. 2-30
25. 2-16/17
26. 2-28
27. 2-19/20
28. 2-21
29. 2-24
30. 2-21
31. 2-27
32. 2-29
33. 2-28
34. 2-4/19
35. 2-34
36. 2-32
37. 2-31
38. 2-30
39. 2-29/30
40. 2-21
41. 2-24
42. 2-23
43. 2-20
44. 1-8/9
45. 6-4
46. 2-26
47. 2-13
48. 1-3
49. 1-1
50. 2-23

SESSION III (RED)
TRANSPORTING CARGO SAFELY

This session reviews basic cargo safety rules. It consists of the following units:

I - Recap -- Review data and specific facts of Session I, Session II, and Handouts for Session III.

II - Pre-Trip/Post-Trip -- Recognizes and applies the concepts and principles of the pre-trip and post-trip inspection.

III - Air Brakes -- Recongizes and applies proper principles, methods, procedures and usage of air brakes.

IV - Skid Control & Recovery -- To recognize the specific causes of skids and to apply the proper recovery procedures.

V - Emergency Maneuvers -- Recognition of the concepts and principles that result in the avoiding of collisions with other vehicles.

VI - Emergency Reporting -- Recognition of the basic procedures to be taken in case of accidents.

VII - Test Taking Skills -- Help with test taking.

VIII - Proficiency Test -- Final step to evaluate text of course.

** One minute at most per question for time allowed!

SESSION: III

SUBJECT: Recap

TIME ALLOTTED: 45 Min.

PAGE: 3 - 1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Review data and specific facts of Session I and II.	1. Session I a. Control systems b. Basic control c. Shifting d. Backing e. Speed management 1. Session II a. Visual search b. Communication c. Space management d. Night operation e. Extreme driving conditions f. Hazard perception	1. Lecture - Past Text 1. Class participation; directed class answers.	1. Asking factual and specific questions.
	2. Handout - Session III	2. Lecture and Handout	2. Proficiency Test.

SESSION III

1. Recap - Session I and II
2. Pre-trip/Post-trip
3. Air Brakes
4. Skid Control and Recovery
5. Emergency Maneuvers
6. Emergency Reporting
7. Test Taking Skills
8. Proficiency Test
9. Referral:
    - A. Upon successful completion of Proficiency Test, student progresses to Session IV.
    - B. Unsuccessful completion of Proficiency Test, student progresses to Makeup Session.

Session III Training Hours = 5

SESSION III

RECAP

Objective

Review data and specific facts of Session I and II.

Topic(s)

Session I
1. Laws
2. Control systems.
3. Basic control.
4. Shifting.
5. Backing.
6. Speed management.

Session II
1. Visual search.
2. Communication.
3. Space management.
4. Night operation.
5. Extreme driving conditions.
6. Hazard perception.

Session III
Curricula Handout

Techniques/Procedures and Activities

Session I and II: Lecture - Past Text
(Color Code - Session I Yellow
Session II Green)
Class participation; directed class answers.

Session III: Lecture and Handouts

SESSION III

1. RECAP

Objective

Review data and specific facts of Session I.

Topic(s)

1. Laws - (CDLM 1-8, 1-9)
2. Control Systems
3. Basic Control (CDLM 2-14, Top 2-13)
4. Shifting (CDLM 1-14, 2-15)
5. Backing (CDLM 2-13, 2-14)
6. Speed Management (CDLM 2-20, 2-21, 2-22)

Techniques/Procedures and Activities

Recap - Session I: Text of CDLM, go to Color Code Session I. Refer to Color Code, highlighted area, Session I (Color Code - Yellow)

1. Laws - (1-8, 1-9, 3-2, 3-3)
   A. Seat Belts
   B. 40' Length Law Straight Truck
   C. 96" to 102" Width All Roads
   D. 48' Box Length
   E. Weight 80,000 5 Axles Maximum
   80,000 Interstate Even With Tri-axle
   Touch on Overhead CDLM, pages 1-8, 1-9
   F. .04 Blood Alcohol Level - Truck only
   G. One License only - Commercial

2. Control Systems
   Handout 1.2-37
   1.2-38

3. Basic Control
   A. No Roll Back on Start
   B. Wheel Held at Opposite Position (9-3)
   C. Traction, Release Acceleration

4. Shifting - (2-14, 2-15)
    A. Double Clutch - Clutch all the time.
    B. Curves, Hills, Shift Prior

5. Backing - (2-13, 2-14)
    A. Safe
    B. Slowly
    C. Helper when possible.

6. Speed Management - (2-20, 2-21, 2-22)
    I. A. 12 - 15 Seconds (1/4 mile)
        B. Empty greater the loaded stop distance. (2-17)
        C. 3/4 seconds 55 mph 60' in 3/4 seconds.
        D. Double speed 4 times destructive power crash.
        E. 55 mph dry pavement 170' to stop 4 1/2 seconds.
        F. 55 mph 6 seconds to stop Football field (300')
        G. Smaller Convex mirror, further away. Distortion. (2-17)
        H. Hi speed major causes fatal crashes.

    II. A. Condition slippery surfaces 1/3 reduction speed. (2-20, 2-21, 2-22)
        B. Shaded area.
        C. Bridges approximately 32° freeze.
        D. Melting ice.
        E. Black ice.
        F. Vehicle Ice - Back of mirror/support.
        G. Rain - Bleeding tar, right after start.
        H. Hydroplanning - 30 mph slow.

SESSION III

2. RECAP

Objective

Review data and specific facts of Session II.

Topic(s)

Recap Session II

1. Visual Search (Pages 2-16, 2-17 top)
   - A. 12-15 sec - 1/4 mile
   - B. Scanning area side by side, mirror check
   - C. Road conditions - hills and curves
   - D. Pedestrians, blind spots, check vehicle
   - E. Special situations, lane changes, turns, merges, tight maneuvers
   - F. Lane changes, before, after, right after, after completion
   - G. Turns
   - H. Merges
   - I. Tight maneuvers
   - J. Understanding sight - convex distortion

2. Communication (Pages 2-17, 2-18, 2-19, 2-20)
   - A. Turns, signal, cancel
   - B. Lane changes, signal prior
   - C. Slowing down - under minimum or posted speed limit
     Flashers (4)
   - D. Stopping on road or parked on road
     Warning device - 10 minute maximum place
     Figure 2-8 & Handout Session II
     Figure 2-9 & Handout Session II
     Figure 1-10 & Handout Session II
     Federal Motor Carrier Safety Regulation #392.22

3. Space Management (Pages 2-23, 2-24)
   - A. Need space ahead/behind - 12-15 sec. rules
     Count 1 sec. every 10 feet under 40 mph
     Add 1 sec. for speeds above 40 mph
   - B. Stay to right
   - C. Dealing with tailgaters
     1. Avoid quick changes
     2. Increase your following distance
     3. Don't speed up
     4. Avoid tricks
   - D. Staying centered
   - E. Traveling next to others

1. Another driver changes lanes
2. You may be trapped and need to change
F. Strong winds
1. Lighter vehicle
2. Coming out of tunnels
G. Overhead
1. Check posted height (N.H. 13´6")
2. Weight in cargo van changes height
3. Vehcile tilt (roads)
4. Backing, check overheads i.e. branches, electrical wires, fire escapes
5. Under vehicle, i.e. railroad tracks, dirt road
H. Right turns
1. Turn slowly (set up)
Check Page 2-25, Figure 2-11, 2-12
I. Left turns - Figure 2-13
J. Enter traffic
1. Size, slow acceleration, all across

4. Night Operation (Page 2-27)

A. Pre-Trip
B. Blinding/High Low Beams
1. Dim 500´ oncoming or following
2. Avoid blinding, don´t flash back
3. High beam whenever you can
4. Low 250´, high 350-500´, signal ahead

5. Extreme Driving Condition (Pages 2-29 - 2-34)

A. Tires front 4-32, rear 2-32
B. Chains
C. Lights & reflectors
D. Windows/mirrors
E. Exhaust system (black lines, coupling out of service)
F. Slippery surfaces
G. Adjust turning/breaking, speed conditions
H. Wet brakes
1. Up gear
2. Light pressure
3. Up rpm´s while crossing water
4. Test stop when possible

6. Hot Weather Driving

A. Two hours - every 100 miles check tires
B. Engine oil coolant
C. Radiator cap (never remove under pressure)
D. Belts - v-belts = tighten approximately 1" play
E. Bleeding tar - rain first start, hot tar rises
F. Slow to prevent overheating increase speed creates more heat, heat increases chances of tire failure, fires, or engine failure

7. Mountain Driving (Page 2-33)

   A. Down gear descending
      Down gear uphill
      Be in right gear before downhill
   B. Long downhill light steady presssure
      Don't stab brake
   C. Escape ramp (pea gravel)

8. Hazard Perception (Pages 2-34, 2-35, 2-36, 2-37)

   A. Be prepared
   B. Visual search
   C. Hazard: (driver, bicyclist, pedestrian)

9. Hazard Roads

   A. Work zones
   B. Drop off
   C. Foreign objects
   D. Offramps/Onramps
      1. Large vehicles, heavy vehicles, real touchy
   E. Drivers who are hazards
      1. Blocked vision - (slow etc.)
      2. Turning around
      3. Parked vehicles
      4. Talking
      5. Ice cream truck
      6. Confused
      7. Slow
      8. Hurry
   F. Drivers body movement
   G. Always plan a way out

SESSION: III

SUBJECT: Pre-Trip and Post-Trip

TIME ALLOTTED: 45 Min.

PAGE: 3 - 2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizes and applies the concepts and principles of the pre-trip and post-trip inspection.	1.A. Seven and fourteen point inspection	1. Lecture - Commercial Driver's Manual A.-D. 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12 1.1-59 Overhead Transparenciers 1.A.-D. Federal Law 1.A. 1.3-44, 1.3-45, 1.3-46, 1.3-47, 1.1-59 Handouts 1.A. 1.3-44, 1.3-45 1.3-46, 1.3-47	1. Asking factual and specific questions.
	1.B. Types of vehicles inspected		
	1.C. What to look for		
	1.D. Overview of the vehicle		
			2. Proficiency Test.

SESSION III

PRE-TRIP AND POST-TRIP

Objective

Recognizes and applies the concepts and principles of the pre-trip and post-trip inspection.

Topic(s)

1. Seven and fourteen point inspection.
2. Types of vehicles inspected.
3. What to look for.
4. Overview of the vehicle.

Techniques/Procedures and Activities

Overhead Transparencies
    1.1-59
    1.3-44
    1.3-45
    1.3-46
    1.3-47

Handouts
    1.3-44
    1.3-45
    1.3-46
    1.3-47

Lecture: CDLM (2-1 to top of 2-12)

Safety. Safety is the most important and obvious reason. Inspecting your vehicle helps you to know your vehicle is safe.

Legal Requirements. Federal and State laws require inspection by the driver. Federal and State inspectors also inspect commercial vehicles. An unsafe vehicle can be put "out of service" until the driver or owner fixes it. **(Federal Law 391.7, 396.1).**

Pre-Trip Inspection. You do a pre-trip inspection before each trip to find problems that could cause a crash or breakdown.

During a Trip. For safety you should:

- Watch gauges for signs of trouble.
- Use your senses to check for problems (look, listen,smell, feel).
- Check critical items when you stop:
  Tires, wheels and rims.
  Brakes.
  Lights.
  Brake and electrical connections to trailer.
  Trailer coupling devices.
  Cargo securement devices.

After-Trip Inspection and Report. You do an after-trip inspection at the end of the trip, day, or tour of duty on each vehicle you operated. It may include filling out a **vehicle condition report** listing any problems you find. The inspection report helps the vehicle owner know when to fix something.

Look for Tire Problems. It is dangerous to drive with bad tires. Look for problems such as:
-- Too much to too little air pressure.
-- Bad wear. You need at least 4/32 inch tread depth in every major groove on front wheels. You need 2/32 inch on other wheels. No fabric should show through the tread or sidewall.
-- Cuts or other damage.
-- Tread separation.
-- Dual tires that come in contact with each other or parts of the vehicle.
-- Mismatched sizes.
-- Radial and bias-ply tires used together.
-- Cut or cracked valve stems.
-- Regrooved, recapped, or retreaded tires on the front wheels of a bus. These are prohibited.

Wheel and Rim Problems
-- Bad wheels or rims could cause an accident.
-- A damaged rim can cause the tire to lose pressure or come off.
-- Rust around wheel nuts may mean the nuts are loose - check tightness.
-- After a tire has been changed, stop a short while later and recheck tightness of nuts.
-- Missing clamps, spacers, studs, lugs means danger.
-- Mismatched, bent, cracked, lock rings are dangerous.
-- Wheels or rims that have had welding repairs are not safe.

Bad Brake Drums or Shoes
-- Cracked drums.
-- Shoes or pads with oil, grease, brake fluid on them.
-- Shoes worn dangerously thin, or missing or broken.

Steering System Defects
-- Missing nuts, bolts, cotter keys or other parts.
-- Bent, loose, or broken parts, such as steering column, steering gear box, or tie rods.
-- If power steering equipped - hoses, pumps, and fluid level; check for leaks.
-- Steering wheel play of more than 10 degrees (approximately 2 inches movement at the rim of a 20-inch steering wheel) can make it hard to steer.

Suspension Systems Defects. The suspension system holds up the vehicle and its load. It keeps the axles in place. therefore broken suspension parts can be extremely dangerous. You should check for:

-- Spring hangers (Figure 2-2) that allow movement of axle from proper position.
-- Cracked or broken spring hangers.
-- Missing or broken leaves in any leaf spring. If one fourth or more are missing, it will put the vehicle "out of service" but any defect could be dangerous (Figure 2-3).
-- Broken leaves in a multi-leaf spring or leaves that have shifted so they might hit a tire or other part.
-- Leaking shock absorbers (figure 2-4).
-- Torque rod or arm, U-bolts, spring hangers or other axle positioning parts that are cracked, damaged, or missing (Figure 2-2 and 2-4).
-- Air suspension systems that are damaged and/or leaking.
-- Any loose, cracked, broken or missing frame members.

Exhaust System Defects. A broken exhaust system can let poison fumes into the cab or sleeper berth. You should check for:
-- Loose, broken, or missing exhaust pipes, mufflers, clamps, bolts or nuts.
-- Exhaust system parts rubbing against fuel system parts, tires or other moving parts of vehicle.
-- Exhaust system parts that are leaking.

Emergency Equipment. Vehicles should be equipped with emergency equipment:
-- Fire extinguisher(s) - 5 B.C. Regular Freight, 10 B.C. Hazardous Materials.
-- Spare electrical fuses (unless equipped with circuit breakers).
-- Warning devices for parked vehicles (for example, three reflective warning triangles).

Cargo (Trucks). You must inspect for cargo overloading and correct balance and securement before each trip. If the cargo contains hazardous materials, you must inspect for proper papers and placarding.

Method of inspecting. You should do a pre-trip inspection the same way each time so you will learn all the steps and be less likely to forget something. The following seven-step procedure should be a useful guide. Memory aids are shown in Figures 2-5, 2-6, and 2-7. They may help you remember important things to inspect. You can cut them out and bring them with you when you take your CDL test. When you take your test you must explain to the examiner what parts of the vehicle you are inspecting. Describe the possible defects you are looking for. It will help you pass the test if you practice this with a friend beforehand. You will be marked down for important items on your vehicle that you fail to inspect.

Approaching the vehicle. Notice general condition. Look for damage or vehicle leaning to one side. Look under the vehicle for fresh oil, coolant, grease or fuel leaks. Check the area around the vehicle for hazards to vehicle movement (people, other vehicles, objects, low hanging wires or limbs, etc.).

Review last vehicle inspection report. Drivers may have to make a vehicle inspection report in writing each day. The vehicle owner should repair any items in the report that affects safety. You should look at the last report to find out what was the matter, if anything. Inspect the vehicle to find out if problems were fixed.

Check that the parking brakes are on and/or wheels chocked. You may have to raise the hood, tilt the cab (secure loose things so they don´t fall and break something), or open the engine compartment door. Check the following:

- Engine oil level.
- Coolant level in radiator; condition of hoses.
- Power steering fluid level; hose condition (if so equipped).
- Windshield washer fluid level.
- Battery fluid level, connections and tie downs (battery may be located elsewhere).
- Automatic transmission fluid level (may require engine to be running).
- Check belts for tightness and excessive wear (alternator, water pump, air compressor) -- learn how much "give" the belts should have when adjusted right, and check each one.
- Leaks in the engine compartment (fuel, coolant, power steering fluid, hydraulic fluid, battery fluid).
- Cracked, worn electrical wiring insulation.

Lower and secure hood, cab, or engine compartment door.

Get in and Start Engine
- Make sure parking brake is on.
- Put gearshift in neutral (or "park" if automatic).
  - Start engine; listen for unusual noises.

Look at the Gauges

- **Oil pressure.** Should come up to normal within seconds after engine is started.
- **Ammeter** and/or **voltmeter.** Should be in normal range(s).
- **Coolant temperature.** Should begin gradual rise to normal operating range.
- **Engine oil temperature.** Should begin gradual rise to normal operating range.
- **Warning lights and buzzers.** Oil, coolant, charging circuit warning lights should go out right away.

Check Condition of Controls. Check all of the following for looseness, sticking, damage, or improper setting

- Steering wheel.
- Clutch.
- Accelerator ("gas pedal").
- Brake controls.
  - Foot brake.
  - Trailer brake (if vehicle has one).
  - Parking brake.
  - Retarder controls (if vehicle has them).
- Transmission controls.
- Interaxle differential lock (if vehicle has one).
- Horn(s).
- Windshield wiper/washer.
- Lights.
  - Headlights.
  - Dimmer switch.
  - Turn signal.
  - 4-way flashers.
  - Clearance, identification, marker light switch(s).

Check Mirrors and Windshield. Inspect mirrors and windshield for cracks, dirt, illegal stickers or other obstructions to seeing. Clean and adjust as necessary.

Check Emergency Equipment.

- Check for safety equipment:
  - Spare electrical fuses (unless vehicle has circuit breakers).
  - Three red reflective triangles.
  - Properly charged and rated fire extinguisher.
- Check for optional items such as:
  - Tire chains (where winter conditions require them.
  - Tire changing equipment.
  - List of emergency phone numbers.
  - Accident reporting kit (packet).

Make sure the parking brake is set, turn off the engine, and take the key with you. Turn on headlights (low beams) and four way flashers, and get out.

- Go to front of vehicle and check that low beams are on and both of the four-way flashers are working.
- Push dimmer switch and check that high beams work.
- Turn off headlights and four-way hazard warning flashers.
- turn on parking, clearance, side-marker and identification lights.
- Turn on right turn signal, and start walk around inspection.

NOTE: Discuss safety note on 2-6.

General

- Walk around and inspect.
- Clean all lights, reflectors and glass as you go along.

Left Front Side

- Driver's door glass should be clean.
- Door latches or lock work properly.
- Left front wheel:
  - Condition of wheel and rim -- missing, bent, broken studs, clamps, lugs, any signs of misalignment.
  - Condition of tires -- properly inflated, valve stem and cap OK, no serious cuts, bulges, tread wear.
  - Use wrench to test rust streaked lug nuts, indicating looseness.
  - Hub oil level ok, no leaks.
- Left front suspension:
  - Condition of spring, spring hangers, shackles, u-bolts.
  - Shock absorber condition.
- Left front brake:
  - Condition of brake drum.
  - Condition of hoses.

Front

- Condition of front axle.
- Condition of steering system.
  - No loose, worn, bent, damaged or missing parts.
  - Must grab steering mechanism to test for looseness.
- Condition of windshield:
  - Check for damage and clean if dirty.
  - Check windshield wiper arms for proper spring tension.
  - Check wiper blades for damage, "stiff" rubber, and securement.
- Lights and reflectors.
  - Parking, clearance and identification lights clean, operating and proper color (amber at front).
  - Reflectors clean and proper color (amber at front).
- right front turn signal light clean, operating, and proper color (amber or white on signals facing forward).

Right Side

- Right front: check all items as done on left front.
- Primary and safety cab locks engaged (if cab-over-engine design).
- Right fuel tank(s).
  - Securely mounted, not damaged or leaking.
  - Fuel crossover line secure.
  - Tank(s) contain enough fuel.
  - Cap(s) on and secure.
- Condition of visible parts.
  - Rear of engine -- not leaking.
  - Transmission -- not leaking.
  - Exhaust system -- secure, not leaking, not touching wires, fuel or air lines.
  - Frame and cross members -- no bends, cracks.
  - Air lines and electrical wiring -- secured against snagging, rubbing, wearing.
  - Spare tire carrier or rack not damaged (if so equipped).
  - Spare tire and wheel adequate (proper size, properly

inflated).

- Cargo securement (trucks).
  - Cargo properly blocked, braced, tied, chained, etc.
  - Header board adequate, secure (if required).
  - Side boards, stakes strong enough, free of damage, properly set in place (if so equipped).
  - Canvas or tarp (if required) properly secured to prevent tearing, billowing or blocking of mirrors.
  - If oversize, all required signs must be safely and properly mounted and all required permits in driver's possession.
  - Curbside cargo compartment doors securely closed, latched/locked, required security seals in place.

Right Rear

-- Condition of wheels and rims - no missing, bent, broken spacers, studs, clamps, lugs.

-- Condition of tires - properly inflated, valve stems and caps OK, no serious cuts, bulges, tread wear, tires not rubbing each other and nothing stuck between them.

-- tires same type, e.g., not mixed radial and bias types.

-- Tires evenly matched (same sizes).

-- Wheel bearing/seals not leaking.

-- Suspension.
  - Condition of spring(s), spring hangers, shackles and U-bolts.
  - Axle secure.
  - Powered axle(s) not leaking lube (gear oil).
  - Condition of torque rod arms, bushings.
  - Condition of shock absorber(s).
  - If retractable axle equipped, check condition of lift mechanism if air powered check for leaks.

-- Brakes
  - Condition of brake drum(s).
  - condition of hoses - look for any wear due to rubbing.

-- Lights and reflectors.
  - Side-marker lights clean, operating and proper color (red at rear, others amber).
  - Side-marker reflectors clean and proper color (red at rear, others amber).

Rear

-- Lights and reflectors.
  - Rear clearance and identification lights clean, operating and proper color (red at rear).
  - Reflectors clean and proper color (red at rear).
  - Taillights clean, operating and proper color (red at rear).
  - right rear turn signal operating, and proper color (red, yellow, or amber at rear).

-- License plate(s) present, clean and secured.

-- Splash guards present, not damaged, properly fastened, not dragging on ground or rubbing tires.

-- Cargo secure (trucks).

- Cargo properly blocked, braced, tied, chained, etc.
- Tailboards up and properly secured.
- End gates free of damage, properly secured in stake sockets.
- Canvas or tarp (if required) properly secured to prevent tearing, billowing, blocking either the rearview mirrors or to cover rear lights.
- If over-length, or over-width, make sure all signs and/or additional lights/flags are safely and properly mounted and all required permits are in driver's possession.
- Rear doors securely closed, latched/locked.

Left Side

-- Check all items as done on right side, plus:
  - Battery (if not mounted in engine compartment).
  - Battery box securely mounted to vehicle.
  - Box has secure cover.
  - Battery(s) secured against movement.
  - Battery(s) not broken or leaking.
  - Fluid in battery(s) at proper level (except maintenance-free type).
  - Cell caps present and securely tightened (except maintenance-free type).
  - Vents in cell caps free of foreign material (except maintenance-free type).

Get In and Turn Off Lights

-- Turn off all lights.
-- Turn on stop lights (apply trailer hand brake, or have a helper put on the brake pedal).
-- Turn on left turn signal lights.

Get Out and Check Lights

-- Left front turn signal light clean, operating and proper color (amber or white on signals facing the front).
-- Left rear turn signal light and both stop lights clean, operating and proper color (red, yellow, or amber).

Get In Vehicle

-- Turn off lights not needed for driving.
-- Check for all required papers, trip manifests, permits, etc.
-- Secure all loose articles in cab (they might interfere with operation of the controls, or hit you in a crash).
-- Start the engine.

Test For Hydraulic Leaks. If the vehicle has hydraulic brakes, pump and brake pedal three times. Then apply firm pressure to the pedal and hold for five seconds. The pedal should not move. If it does, there may be a leak or other problem. Get it fixed before driving.

If the vehicle has air brakes, do the checks described in Sections 5 and 6 of this manual.

Test Parking Brake (Hydraulic)
-- Fasten seat belt.
-- Allow vehicle to move forward **slowly.**
-- Apply parking brake.
-- If it doesn't stop vehicle, it is faulty; get it fixed.

Test Service Brake Stopping Action
-- Go about five miles per hour.
-- Push brake pedal firmly.
-- "Pulling" to one side or the other can mean brake trouble.
-- Any unusual brake pedal "feel" or delayed stopping action can mean trouble.

This completes the pre-trip inspection.

Check Vehicle Operation Regularly

You should check:
-- Instruments.
-- Air pressure gauge (if you have air brakes).
-- Temperature gauges.
-- Pressure gauges.
-- Ammeter/voltmeter.
-- Mirrors.
-- Tires.
-- Cargo, cargo covers.

If you see, hear, smell, or feel anything that might mean trouble, check it out.

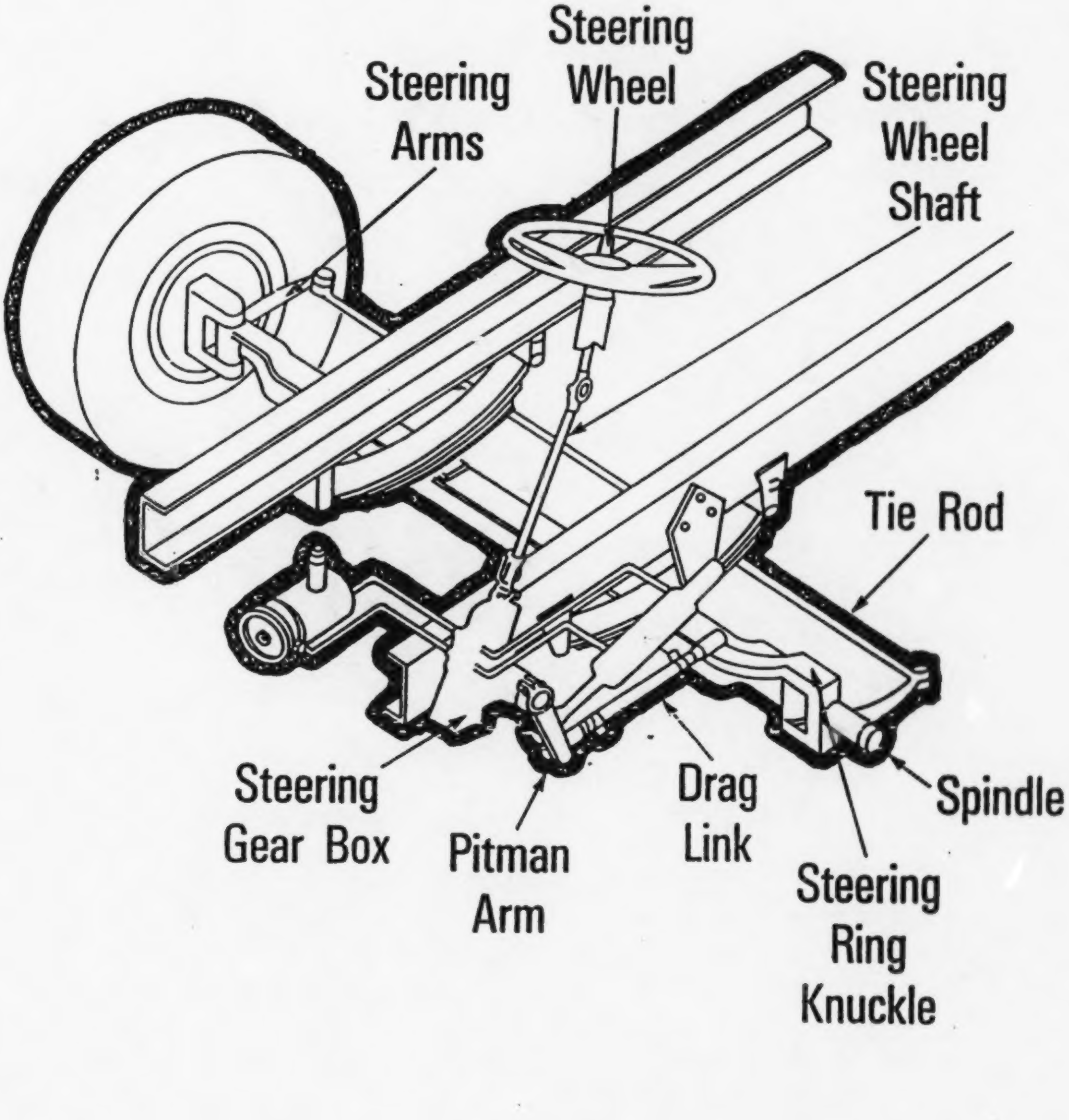
Safety Inspection
-- Drivers of trucks and truck tractors must inspect within the first 25 miles of a trip and every 150 miles or every 3 hours (whichever comes first) afterward.
-- Check these things
  - Cargo doors and/or cargo securement.
  - Tires - Enough air pressure; not overheated.
  - Brakes - not overheated (put back of hand near brake drums to test).
  - Coupling devices.

You may have to make a written report each day on the condition of the vehicle(s) you drove. Report anything affecting safety or possibly leading to mechanical breakdown.

The vehicle inspection report tells the vehicle owner about problems that may need fixing. Keep a copy of your report in the vehicle for one day. That way, the next driver can learn about any problems you have found.

Visual 11

Steering System
Key Components


Steering Wheel
Steering Arms
Steering Wheel Shaft
Tie Rod
Steering Gear Box
Pitman Arm
Drag Link
Spindle
Steering Ring Knuckle

Visual 13

Federal Motor Carrier Safety Regulations—Requirements for Inspection

- FMCSR 392.7
  - "No Motor Vehicle Shall Be Driven Unless the Driver Satisfies Himself That the Following Parts Are in Good Working Order."
    - Horn
    - Windshield Wiper
    - Steering
    - Service Brakes
    - Parking Brakes
    - Lights and Reflectors
    - Tires
    - Mirrors
    - Coupling Device
- FMCSR 392.8
  - Requires Check for Emergency Equipment
- FMCSR 392.9
  - Requires Inspection of Cargo Securement
- FMCSR 397
  - Requires Following Rules for Hazardous Materials and Required Placarding

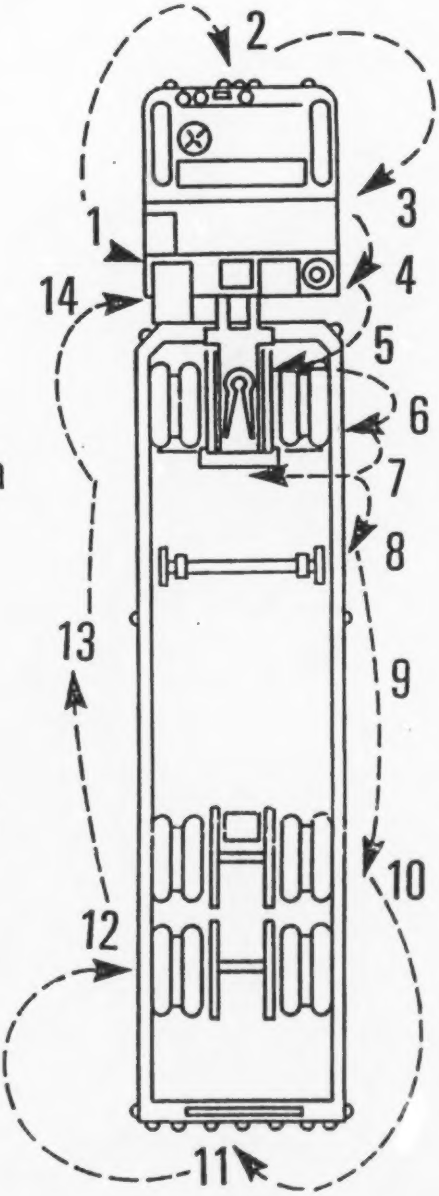
Visual 14

Seven-Step Pretrip Inspection Checklist

1. Approach Vehicle—Look for Leaks
2. Check Under Hood or Cab
3. Start Engine and Check Inside Cab
4. Check Headlights
5. Conduct Walkaround Inspection
6. Check Signal Lights
7. Check Air Brake System

Walkaround Sequence

1. Left Side of Cab Area
2. Front of Cab Area
3. Right Side of Tractor Area
4. Right Saddle Tank Area
5. Coupling System Area
6. Right Rear Tractor Wheels Area
7. Rear of Tractor Area
8. Trailer Frontal Area
9. Right Side of Trailer Area
10. Right Rear Trailer Wheels Area
11. Rear of Trailer Area
12. Left Rear Trailer Wheels Area
13. Left Side of Trailer Area
14. Left Saddle Tank Area



3-3

EnRoute and Post-Trip Inspection Requirements

EnRoute

- Monitoring
  - Instruments
  - Mirrors
  - Tires
  - Cargo
- Safety Check
  - Walkaround Every 150 Miles or 3 Hours
  - Check Tires and Brakes
  - Make Light Check Before Dark
  - Make Cargo Checks When Required
- Federal Requirements
  - FMCSR 392.9: Cargo Check Within 25 Miles
  - FMCSR 397.17
    - Hazardous Materials
    - Check Tires Every 2 Hours or 100 Miles, if Operating With Duals
      - Remove Overheated Tires
      - Get Underinflated Tires Repaired

Post-Trip

- Fill Out Vehicle Condition Report Which Identifies Any Needed Service

SESSION: III

SUBJECT: Air Brakes

TIME ALLOTTED: 40 Min.

PAGE: 3 - 3

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizes and applies proper principles, methods, procedures and usage of air brakes.	1.A. Parts of an air brake system B. Air compressor C. Governor D. Storage tank E. Air tank drain F. Alcohol evaporator G. Safety valve H. Pedal I. Foundation pedal J. Brake drums a. Shoes & linings b. S-Cam brake c. Wedge brake d. Disc brake e. Pressure guages f. Application pressure g. Low pressure warning h. Stop light switch i. Front brake liminating valve j. Spring brake k. Parking brake control K. Duel air brake systems a. Inspecting air brake system	1. Lecture - Commercial Driver's Manual 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-8, 5-9, 5-10 Overhead Transparencies 1.A. 1.2-37, 4.1-321, 4.1-328 (Chart) 4.1-329 1.J. 4.1-312, 4.1-314 1.J.c. 4.1-314 1.J.e. 4.1-305 1.J.f. 4.1-306 1.J.i. 4.1-302 Handouts 1.A.-K. - 4.1-312, 4.1-327	1. Asking factual and specific questions. 2. Proficiency Test.

SESSION III

AIR BRAKES

Objective

Recognizes and applies proper principles, methods, procedures and usage of air brakes.

Topic(s)

1. Parts of an air brake system.
2. Air compressor.
3. Governor.
4. Storage tank.
5. Air tank drain.
6. Alcohol evaporator.
7. Safety valve.
8. Pedal.
9. Foundation pedal.
10. Brake drums:
    A. Shoes and linings.
    B. S-Cam brake.
    C. Wedge brake.
    D. Disc brake.
    E. Pressure gauges.
    F. Application pressure.
    G. Low pressure warning.
    H. Stop light switch.
    I. Front brake liminating valve.
    J. Spring brake.
    K. parking brake control.
11. Duel air brake systems: Inspecting air brake system.

Techniques/Procedures and Activities

Overhead Transparencies

1.2-37
4.1-302
4.1-305
4.1-306
4.1-312
4.1-313
4.1-314
4.1-321
4.1-322
4.1-327
4.1-328 (Chart)
4.1-329

Handouts

4.1-312
4.1-327

Lecture: CDLM (5-1 to 5-10)

There are many parts to an air brake system. You should know about the parts discussed here.

The air compressor pumps air into the air storage tanks (reservoirs). The air compressor is connected to the engine through gears or a V-belt. The compressor may be air cooled or may be cooled by the engine cooling system. It may have its own oil supply, or be lubricated by engine oil. If the compressor has its own oil supply, check the oil level before driving.

The governor controls when the air compressor will pump air into the air storage tanks. When air tank pressure rises to the "cut-out" level (around 125 pounds per square inch, or "psi"), the governor stops the compressor from pumping air. When the tank pressure falls to the "cut-in" pressure (around 100 psi) the governor allows the compressor to start pumping again.

Air storage tanks are used to hold compressed air. The number and size of air tanks varies among vehicles. The tanks will hold enough air to allow the brakes to be used several times even if the compressor stops working.

Compressed air usually has some water and some compressor oil in it which is bad for the air brake system. For example, the water can freeze in cold weather and cause brake failure. The water and oil tend to collect in the bottom of the Wet or first air tank. Therefore, each air tank is equipped with a drain valve in the bottom. There are two types:

-- Manually operated by turning a quarter turn, shown in Figure 5-1, or by pulling a cable. You must drain the tanks yourself at the end of each day of driving.
-- Automatic - the water and oil is automatically expelled. They may be equipped for manual draining as well.

The automatic types are available with electric heating devices. These help prevent freeze up of the automatic drain in cold weather. Some air brake systems have an alcohol evaporator to put alcohol into the air system. This helps to reduce the risk of ice in air brake valves and other parts during cold weather. Ice inside the system can make the brakes stop working.

Check the alcohol container and fill up as necessary every day during cold weather. **Daily air tank drainage is still needed to get rid of water and oil.** (Unless the system has automatic drain valves.)

A safety relief valve is installed in the first tank the air compressor pumps air to. The safety valve protects the tank and the rest of the system from too much pressure. The valve is usually set to open at 150 psi. If the safety valve releases air, something is wrong. Have the fault fixed by a mechanic.

You put on the brakes by pushing down the brake pedal. (It is also called the foot valve, or treadle valve.) Pushing the pedal down harder applies more air pressure. Letting up on the brake pedal reduces the air pressure and releases the brakes. Releasing the brakes lets some compressed air go out of the system, so the air pressure in the tanks is reduced. It must be made up by the air compressor. Pressing and releasing the pedal unnecessarily can let air out faster than the compressor can replace it. If the pressure gets too low the brakes won´t work.

When you push the brake pedal down, two forces push back against your foot. One force comes from a spring. The second force comes from the air pressure going to the brakes. This lets you feel how much air pressure is being applied to the brakes.

Foundation brakes are used at each wheel. The most common type is the S-cam drum brake, shown in Figure 5-2. The parts of the brake are discussed below.

Brake drums, shoes and linings. Brake drums are located on each end of the vehicle´s axles. The wheels are bolted to the drums. The braking mechanism is inside the drum. To stop, the brake shoes and linings are pushed against the inside of the drum. This causes friction which slows the vehicle (and creates heat). The heat a drum can take without damage depends on how hard and how long the brakes are used. Too much heat can make the brakes stop working.

S-Cam Brakes. When you push the brake pedal, air is let into each brake chamber (see Figure 5-2). Air pressure pushes the rod out, moving the slack adjuster, thus twisting the brake cam shaft. This turns the S-cam (so called because it is shaped like the letter "S"). The S-cam forces the brake shoes away from one another and presses them against the inside of the brake drum. When you release the brake pedal, the S-cam rotates back and a spring pulls the brake shoes away from the drum, letting the wheels roll freely again.

Wedge Brakes. In this type brake, the brake chamber push rod pushes a wedge directly between the ends of two brake shoes. This moves them apart and against the inside of the brake drum. Wedge brakes may have a single brake chamber, or two brake chambers, pushing wedges in at both ends of the brake shoes. Wedge type brakes may be self-adjusting or may require manual adjustment.

Disc Brakes. In air-operated disc brakes, air pressure acts on a brake chamber and slack adjuster, like S-cam brakes. But instead of the S-cam, a "power screw" is used. The pressure of the brake chamber on the slack adjuster turns the power screw. The power screw clamps the disc or rotor between the brake lining pads of a caliper, similar to a large C-clamp. Wedge brakes and disc brakes are less common than S-cam brakes.

All air-braked vehicles have a pressure gauge connected to the air tank. If the vehicle has a dual air brake system, there will be a gauge for each half of the system. (Or a single gauge with two needles). Dual systems will be discussed later. These gauges tell you how much pressure is in the air tanks.

An application gauge shows how much air pressure you are applying to the brakes. (This gauge is not on all vehicles.) When going down steep grades, increasing application pressure to hold the same speed means the brakes are fading. You should slow down and use a lower gear. The need for increased pressure can also be caused by brakes out of adjustment, air leaks, or mechanical problems.

A low air pressure warning signal is required on vehicles with air brakes. A warning signal you can see must come on before the air pressure in the tanks falls below 60 psi. (Or one half the compressor governor cutout pressure on older vehicles). The warning is usually a red light. A buzzer may also come on.

Another type of warning is the "wig wag". This device drops a mechanical arm into your view when the pressure in the system drops below 60 psi. An automatic wig wag will rise out of your view when the pressure in the system goes above 60 psi. The manual reset type must be placed in the "out of view" position manually. It will not stay in place until the pressure in the system is above 60 psi.

On large buses it is common for the low pressure warning devices to signal at 80-85 psi.

Drivers behind you must be warned when you put your brakes on. The air brake system does this with an electric switch that works by air pressure. The switch turns on the brake lights when you put on the air brakes.

Some older vehicles (made before 1975) have a front brake limiting valve and a control in the cab. The control is usually marked "normal" and "slippery". When you put the control in the "slippery" position, the limiting valve cuts the "normal" air pressure to the front brakes by half. Limiting valves were used to reduce the chance of the front wheels skidding on slippery surfaces. However, they actually reduce the stopping power of the vehicle. Front wheel braking is good under all conditions. Test have shown front wheel skids from braking are not likely even on ice. **Make sure the control is in the "normal" position to have normal stopping power.**

Many vehicles have automatic front wheel limiting valves. They reduce the air to the front brakes except when the brakes are put on very hard (60 psi or more application pressure). These valves cannot be controlled by the driver.

All trucks, truck tractors, and buses must be equipped with emergency brakes and parking brakes. They must be held on by mechanical force (because air pressure can eventually leak away). Spring brakes are usually used to meet these needs. When driving, powerful springs are held back by air pressure. If the air pressure is removed, the springs put on the brakes. A parking brake control in the cab allows the driver to let the air out of the spring brakes. This lets the springs put the brakes on. A leak in the air brake system which causes all the air to be lost will also cause the springs to put on the brakes.

Tractor and straight truck spring brakes will come fully on when air pressure drops to a range of 20 to 45 psi (typically 20 to 30 psi). Do not wait for the brakes to come on automatically. When the low air pressure warning light and buzzer first come on, bring the vehicle to a safe stop right away, while you can still control the brakes.

The braking power of spring brakes depends on the brakes being in adjustment. If the brakes are not adjusted right, neither the regular brakes nor the emergency/parking brakes will work right.

In newer vehicles with air brakes, you put on the parking brakes using a **diamond shaped, yellow, push-pull control knob.** You pull the knob out to put the parking brakes (spring brakes) on, and push it in to release them. On older vehicles, the parking brakes may be controlled by a lever. Use the parking brakes whenever you park.

Caution. Never push the brake pedal down when the spring brakes are on. If you do, the brakes could be damaged by the combined forces of the springs and the air pressure. Many brake systems are designed so this will not happen. But not all systems are set up that way, and those that are may not always work. it is much better to develop the habit of not pushing the brake pedal down when the spring brakes are on.

Modulating control valves. In some vehicles a control handle on the dash board may be used to apply the spring brakes gradually. This is called a modulating valve. It is spring loaded so you have a feel for the braking action. The more you move the control lever, the harder the spring brakes come on. They work this way so you can control the spring brakes if the service brakes fail. When parking a vehicle with a modulating control valve, move the lever as far as it will go and hold it in place with the locking device.

Dual parking control valves. When main air pressure is lost, the spring brakes come on. Some vehicles, such as buses, have a separate air tank which can be used to release the spring brakes. This is so you can move the vehicle in an emergency. One of the valves is a push-pull type and is used to put on the spring brakes for parking. The other valve is spring loaded in the "out" position. When you push the control in, air from the separate air tank releases the spring brakes so you can move. When you release the button, the spring brakes come on again. There is only enough air in the separate tank to do this a few times. Therefore, plan carefully when moving. Otherwise, you may be stopped in a dangerous location when the separate air supply runs out.

Most newer heavy-duty vehicles use dual air brake systems for safety. A dual air brake system has two separate air brake systems which use a single set of brake controls. Each system has its own air tanks, hoses, lines, etc. One system typically operates the regular brakes on the rear axle or axles. The other system operates the regular brakes on the front axle (and possibly one rear axle). Both systems supply air to the trailer (if there is one). The first system is called the "primary" system. The other is called the "secondary" system.

Before driving a vehicle with a dual air system, allow time for the air compressor to build up a minimum of 100 psi pressure in both the primary and secondary systems. Watch the primary and secondary air pressure gauges (or needles, if the system has two needles in one gauge). Pay attention to the low-air-pressure warning light and buzzer. The warning light and buzzer should shut off when air pressure in both systems rises to a value set by the manufacturer. This value must be greater than 60 psi.

The warning light and buzzer should come on before the air pressure drops below 60 psi in either system. If this happens while driving you should stop right away and safely park the vehicle. If one air system is very low on pressure, either the front or the rear brakes will not be operating fully. This means it will take you longer to stop. Bring the vehicle to a safe stop, and have the air brake system fixed.

You should use the basic seven-step inspection procedure described in Section 2 to inspect your vehicle. There are more things to inspect on a vehicle with air brakes than one without them. We discuss these things below, in the order that they fit into the seven-step method.

Check Air Compressor Drive Belt (if compressor is belt driven). If the air compressor is belt-driven, check the condition and tightness of the belt. The belt should be in good condition.

Check Manual Slack Adjusters on S-Cam Brakes. Park on level ground and chock the wheels to prevent the vehicle from moving. Turn off the parking brakes so you can move the slack adjusters. Use gloves and pull hard on each slack adjuster that you can get to. If a slack adjuster moves more than about one inch where the push rod attaches to it, it probably needs adjustment. Adjust it or have it adjusted. Vehicles with too much brake slack can be very hard to stop. Out-of-adjustment brakes are the most common problem found in roadside inspections. Be safe; check the slack adjusters. **NOTE:** 9/16 inch wrench.

Check Brake Drums (or Discs), Linings, and Hoses. Brake drums (or discs) must not have cracks longer than one half the width of the friction area. Linings (friction material) must not be loose, soaked with oil or grease. They must not be dangerously thin. Mechanical parts must be in place, not broken or missing. Check the air hoses connected to the brake chambers to make sure they aren´t cut or worn due to rubbing.

Do the following checks instead of the hydraulic brake check shown in Section Two "Step 7: Check Brake System".

Test Low Pressure Warning Signal. Shut the engine off when you have enough air pressure that the low pressure warning signal is not on. Turn the electrical power on and step on and off the brake pedal to reduce air tank pressure. The low air pressure warning signal must come on before the pressure drops to less than 60 psi in the air tank (or tank with the lowest air pressure, in dual air systems).

If the warning signal doesn´t work, you could lose air pressure and you would not know it. This could cause sudden emergency braking in a single circuit air system. In dual systems the stopping distance will be increased. Only limited braking can be done before the spring brakes come on.

Check That the Spring Brakes Come on Automatically. Chock the wheels, release the parking brakes when you have enough air pressure to do it, and shut the engine off. Step on and off the brake pedal to reduce the air tank pressure. The "parking brake" knob should pop out when the air pressure falls to the manufacturer´s specification (usually in a range between 20-40 psi). this causes the spring brakes to come on.

Check Rate of Air Pressure Buildup. With the engine at operating RPM, the pressure should build from 85 to 100 psi within 45 seconds in dual air systems. (If the vehicle has larger than minimum air tanks, the buildup time can be longer and still be safe. Check the manufacturer´s specifications.) In single air systems (pre 1975), typical requirements are pressure buildup from 50 to 90 psi within 3 minutes with the engine at an idle speed of 600-900 RPM.

If air pressure does not build up fast enough, your pressure may drop too low during driving, requiring an emergency stop. Don´t drive until you get the problem fixed.

Test Air Leakage Rate. With a fully-charged air system (typically 125 psi), turn off the engine, release the service brake, and time the air pressure drop. The loss rate should be less than 2 psi in one minute for single vehicles, less than 3 psi in one minute for combination vehicles. Then apply 90 psi or more with the brake pedal. After the initial pressure drop, if the air pressure falls more than 3 psi in one minute for single vehicles (more than 4 psi for combination vehicles) the air loss rate is too much. Check for air leaks and fix before driving the vehicle. Otherwise, you could lose your brakes while driving.

Check Air Compressor Governor Cut-in and Cut-out Pressures. Pumping by the air compressor should start at about 100 psi and stop at about 125 psi. (Check manufacturer's specifications.) Run the engine at a fast idle. The air governor should cut-out the air compressor at about the manufacturer's specified pressure. The air pressure shown by your gauge(s) will stop rising. With the engine idling, step on and off the brake to reduce the air tank pressure. The compressor should cut-in at about the manufacturer's specified cut-in pressure. The pressure should begin to rise.

If the air governor does not work as described above, it may need to be fixed. A governor that does not work right may not keep enough air pressure for safe driving.

Test Parking Brakes. Stop the vehicle, put the parking brake on, and gently pull against it in a low gear to test that the parking brake will hold.

Test Service Brakes. Wait for normal air pressure, release the parking brake, move the vehicle forward slowly (about 5 mph), and apply the brakes firmly using the brake pedal. Note any vehicle "pulling" to one side, unusual feel, or delayed stopping action.

This test may show you problems which you otherwise wouldn't know about until you needed the brakes on the road.

Push the brake pedal down. Control the pressure so the vehicle comes to a smooth, safe stop. If you have a manual transmission, don't push the clutch in until the engine RPM is down close to idle. When stopped, select a starting gear.

You should brake so you can steer and so your vehicle stays in a straight line. use one of the following two methods.

Controlled braking. This method is also called "squeeze" braking. Put on the brakes as hard as you can **without** locking the wheels. Do not turn the steering wheel while doing this. If you need to make large steering adjustments or if you feel the wheels sliding, release the brakes. brake again as soon as the tires get traction.

Stab braking. a) Press on the brake pedal as hard as you can. b) Release the brakes when the wheels lock up. c) As soon as the wheels start rolling, put on the brakes fully again. It can take up to one second for the wheels to start rolling after you release the brakes. Make sure you stay off the brakes long enough to get the wheels rolling again. Otherwise the vehicle may not stay in a straight line.

We talked about stopping distance in Section 2 under "Speed and Stopping Distance". With air brakes there is an added delay: the time required for the brakes to work after the brake pedal is pushed. With hydraulic brakes (used on cars and light/medium trucks), the brakes work instantly. However, with air brakes, it takes a little time (one half second or more) for the air to flow through the lines to the brakes. Thus, the total stopping distance for vehicles with air brake systems is made up of **four** different factors.

+ Perception Distance
+ Reaction Distance
+ Brake Lag Distance
+ Effective Braking Distance
= Total Stopping Distance

The air brake lag distance at 55 mph on dry pavement adds about 32 feet. So at 55 mph for an average driver under **good** traction and brake conditions, the total stopping distance is over 300 feet. This is longer than a football field.

When you use the brakes, they get hot. Brakes can take a lot of heat. However, brakes will stop working if there is too much heat. Excessive heat is caused by trying to slow down from too high a speed too many times or too quickly. Brakes will fade when they get too hot (You will have to push harder on the pedal to get the same stopping force). They can fade so badly they will not slow you down.

The right way to go down long grades is to use a low gear and go slow enough that a fairly light, steady use of the brakes will keep you from speeding up. If you go slow enough, the brakes will be able to get rid of the heat so they will work as they should.

Some people believe that using the brakes hard going downhill but letting up on them from time to time will allow them to cool. Test have shown this is **not** true. Brakes cool very slowly, so the cooling between hard brakings is not enough to prevent overheating. Also, the vehicle picks up speed when the brakes are let up, which means more hard braking to slow it back down. Braking in this way, on-and-off, builds up more heat than the light, steady method does. Therefore, go slow enough, use the right gear, and maintain light, steady pressure on the brakes.

It is always important for the brakes to be adjusted right. However, it is **especially important when going down steep grades.** In addition to proper slack adjustment, the air brake system should be balanced, to give about the same braking at each of the wheels. Otherwise, some brakes will do more work than others. They will heat up and lose some of their stopping power. Brake balance can be tested and fixed by good air brake mechanics.

If the low air pressure warning comes on, **stop and safely park your vehicle as soon as possible.** There might be an air leak in the system. Controlled braking is possible only while enough air remains in the air tanks. The spring brakes will come on when the air pressure drops into the range 20 to 45 psi. A heavily loaded vehicle will take a long distance to stop, because the spring brakes do not work on all axles. Lightly loaded vehicles or vehicles on slippery roads may skid out of control when the spring brakes some on. It is much safer to stop while there is enough air in the tanks to use the foot brake.

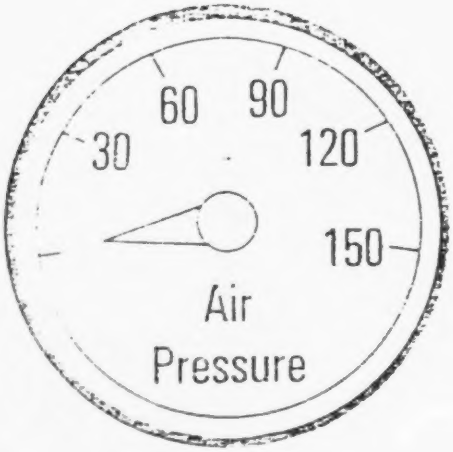
Any time you park, use the parking brakes, except as noted below. Pull the parking brake control knob out to apply the parking brakes, push it in to release them. The control will be a yellow, diamond-shaped knob labeled "parking brakes" on newer vehicles. On older vehicles, it may be a round blue knob or some other shape (including a lever that swings from side to side or up and down).

Don't use the parking brakes if the brakes are very hot (from just having come down a steep grade), or if the brakes are very wet in freezing temperatures. If they are used while they are very hot, they can be damaged by the heat. If they are used in freezing temperatures when the brakes are very wet, they can freeze so the vehicle can not move. Use wheel chocks to hold the vehicle. Let hot brakes cool before using the parking brakes. If the brakes are wet, use the brakes lightly while driving in a low gear to heat and dry them

NOTE: Must have at least two wheel chocks.

If your vehicle does not have automatic air tank drains, drain your air tanks at the end of each working day to remove moisture and oil. Otherwise, the brakes could fail.

Basic Pressure Gauges

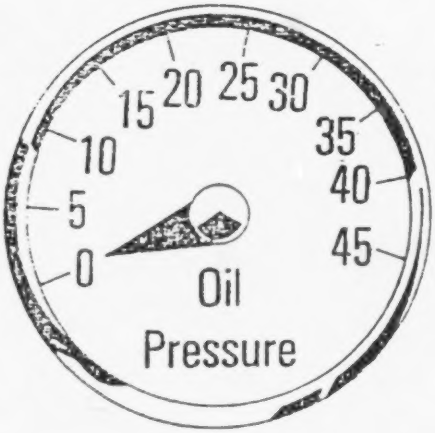

30
60
90
120
150
Air
Pressure

Air Pressure

Normal 95-120

Low 60 STOP!

Low 45-BRAKES COME ON!


0
5
10
15
20
25
30
35
40
45
Oil
Pressure

Oil Pressure

Idling 5-20 PSI

Operating 35-75 PSI

Low, Dropping, Flucuating

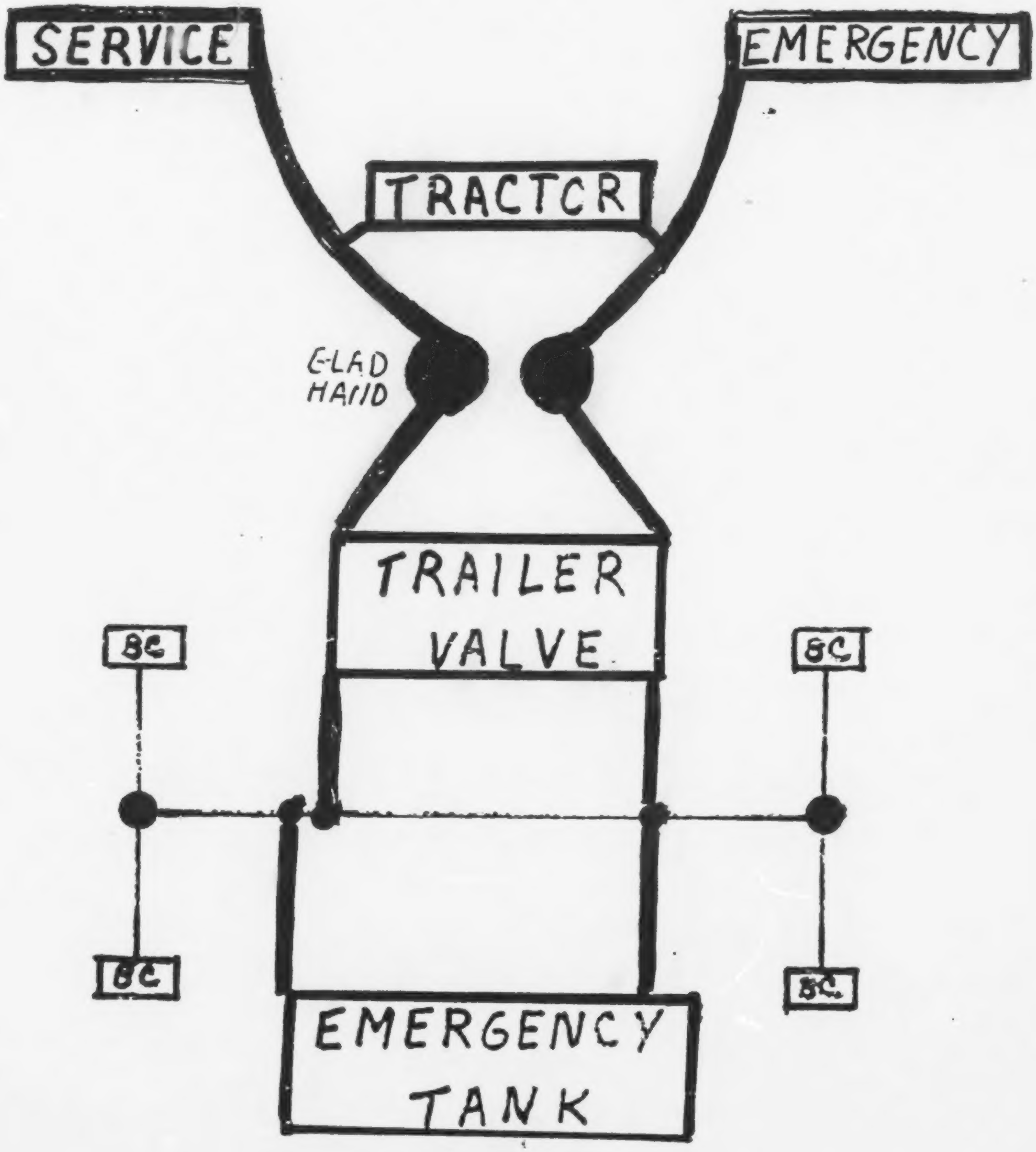
STOP! IMMEDIATELY!

Without Oil the Engine Can Be Destroyed Rapidly

SIMPLIFIED AIR BRAKE SYSTEM

FOOT/TREADLE
TROLLY VALVES

TRACTOR PROTECTION
TRAILER SUPPLY


SERVICE
EMERGENCY
TRACTOR
GLAD HAND
TRAILER VALVE
BC
BC
BC
BC
EMERGENCY TANK

Total Stopping Distance

4.1-328

Visual 9.47

Speed Miles Per Hour	= Feet Per Second	Preception and Reaction Distance	PLUS	"Air Brake Lag" Distance	PLUS	Actual Braking Distance	Equals	Total Stopping Distance
15	22.0	34	+	6	+	13	=	53 Feet
20	29.3	44	+	8	+	22	=	74 Feet
25	36.6	54	+	10	+	35	=	99 Feet
30	44.0	66	+	12	+	50	=	128 Feet
40	58.6	88	+	16	+	89	=	193 Feet
50	73.2	110	+	20	+	139	=	269 Feet
55	80.6	120	+	22	+	169	=	311 Feet
60	88.0	132	+	24	+	201	=	357 Feet

Average Driver Perception Time =.75 Second Average Driver Reaction Time=.75 Second

Total Driver Perception and Reaction Time=Distance Traveled in 1.5 Seconds

Average "Brake Lag" Distance (Time for Air to Pass Through a System in Good Working Order)=The Distance Traveled in .27 Seconds

Actual Braking Distance (After Shoes Make Contact With the Drums and Tires Are on Good, Dry Pavement) the Coefficient of Friction=.6 Deceleration Rate at 19.3 Feet Per Second/Per Second Average

Distances Based Upon a Fully Loaded Tractor-Trailer

Note: These Are Best Possible Stopping Distances—Under "Average" Conditions These Distances Will Increase Considerably

H 8-3

371

372

Visual 3.4

Speed Retarders

(Auxiliary Brakes)

Four Basic Types

1. Exhaust Brakes
   - Williams Air Controls – "Blue Ox"
   - Mercedes Benz Trucks – "Exhaust Brake"

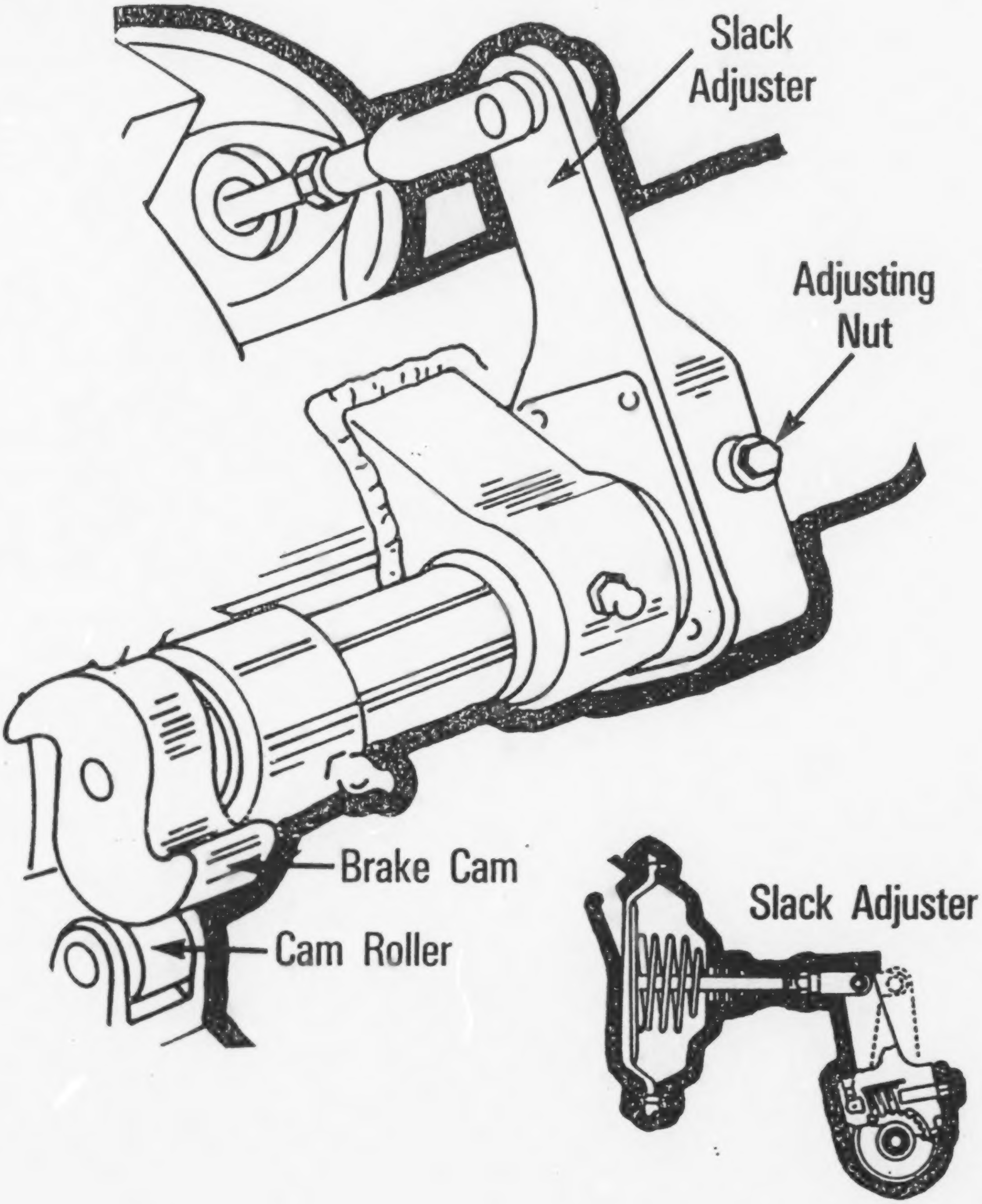
2. Engine Brakes
   - Jacobs Manufacturing Company – "Jake Brake"
   - Mack Trucks – "Dynatard"

3. Hydraulic Retarders
   - Caterpillar Tractor Company – "Cat Brakesaver"
   - Detroit Diesel Allison's – "Allison Integrated Retarder"

4. Electric Retarders
   - Jacobs Manufacturing Company – "Jaker Brake"
   - Francoise Thelma Company – "Thelma Retarder"

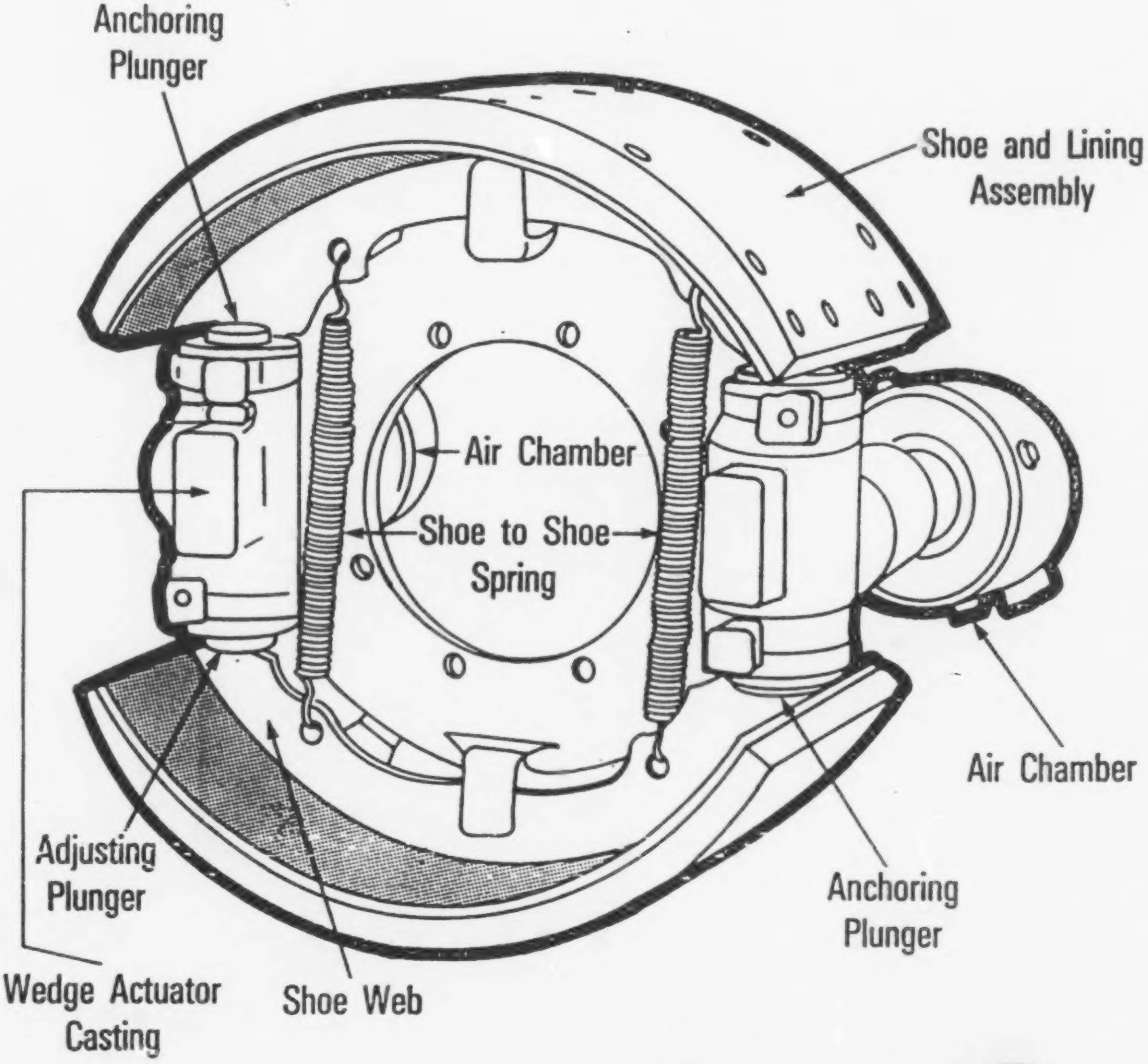
Visual 9.31

Manual Slack Adjuster

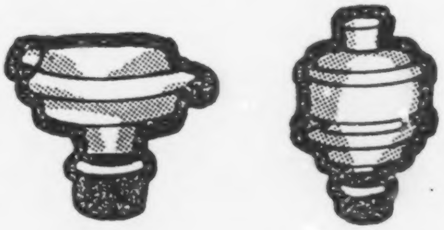

Slack Adjuster
Adjusting Nut
Brake Cam
Cam Roller
Slack Adjuster

Visual 9.33

Wedge Actuated Drum Brake


Anchoring Plunger
Shoe and Lining Assembly
Air Chamber
Shoe to Shoe Spring
Air Chamber
Adjusting Plunger
Anchoring Plunger
Wedge Actuator Casting
Shoe Web

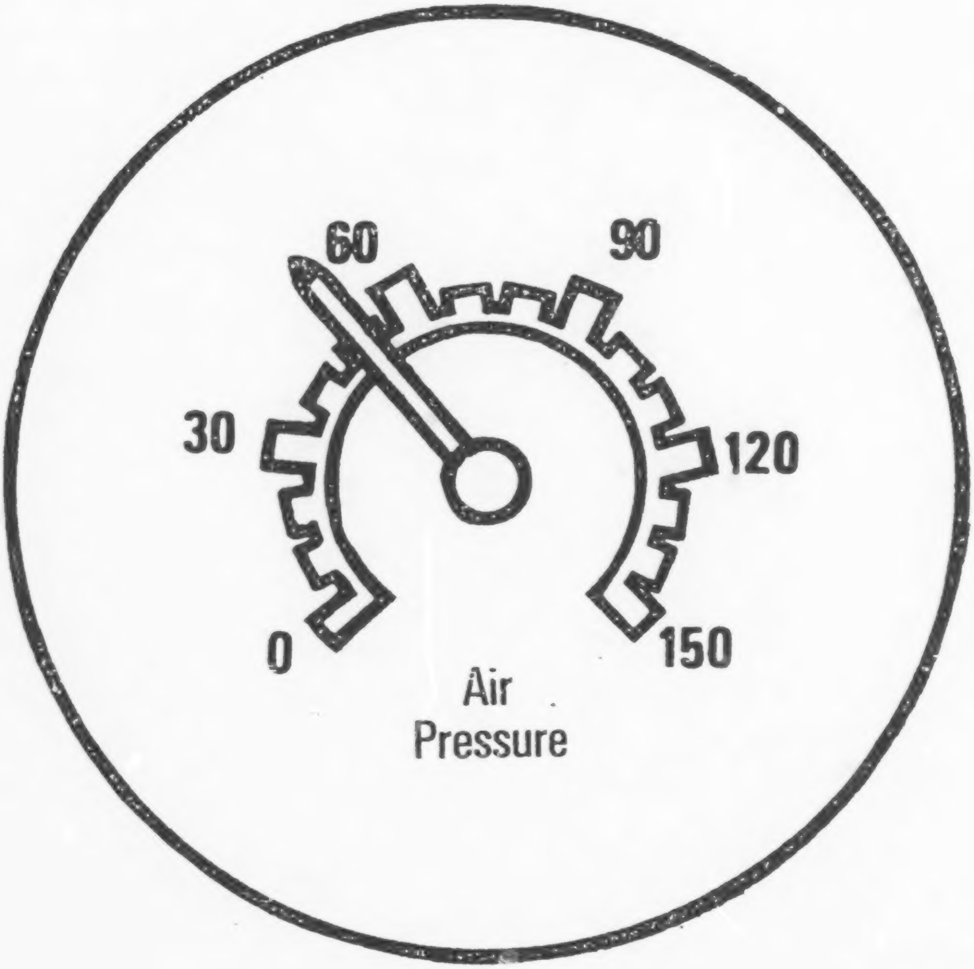
Wedge Brake Acutators



729 ./

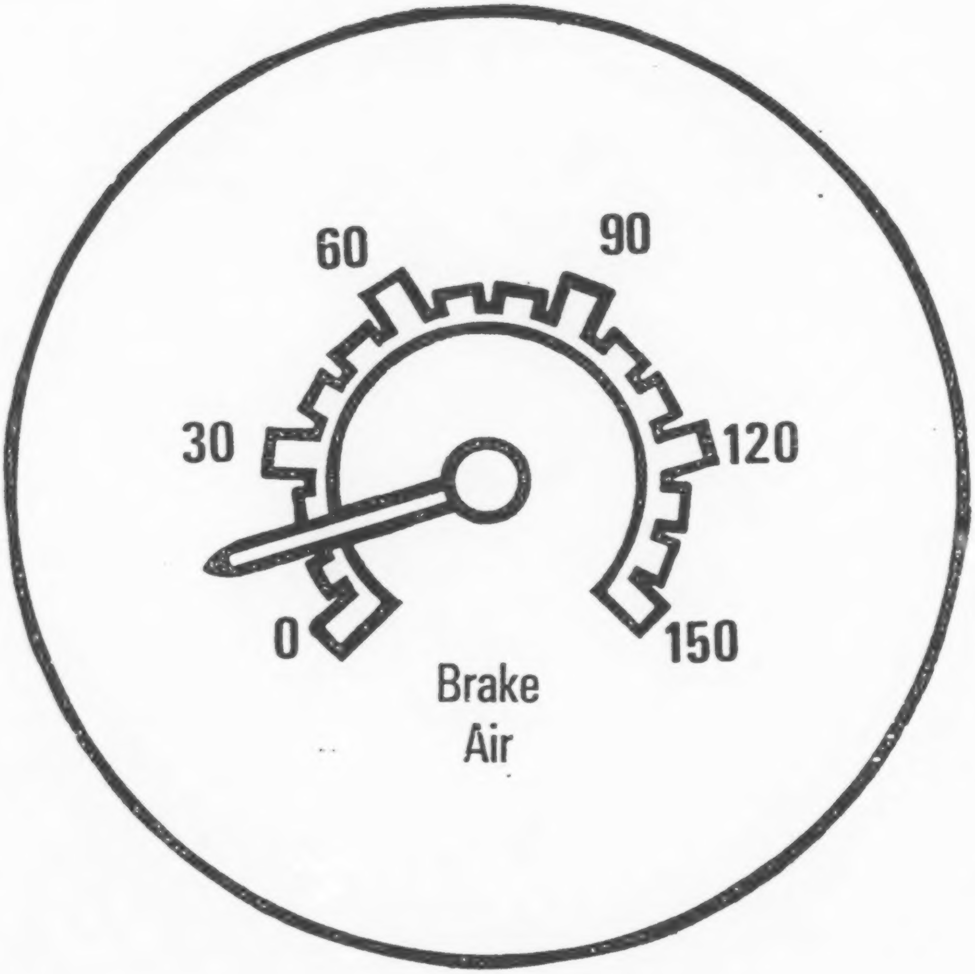
Visual 9.24

Air Reservoir Pressure Gauge


60
90
30
120
0
150
Air
Pressure

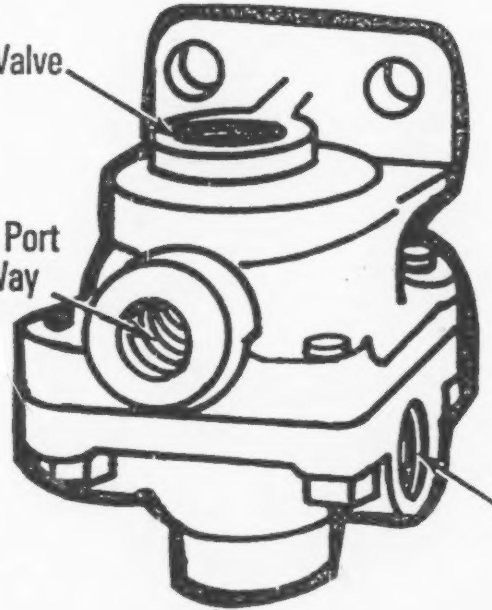
30 ✓

Air Application Gauge


60
90
30
120
0
150
Brake
Air

Front Brake Limiting Valve

Limiting & Quick Releasing Valve



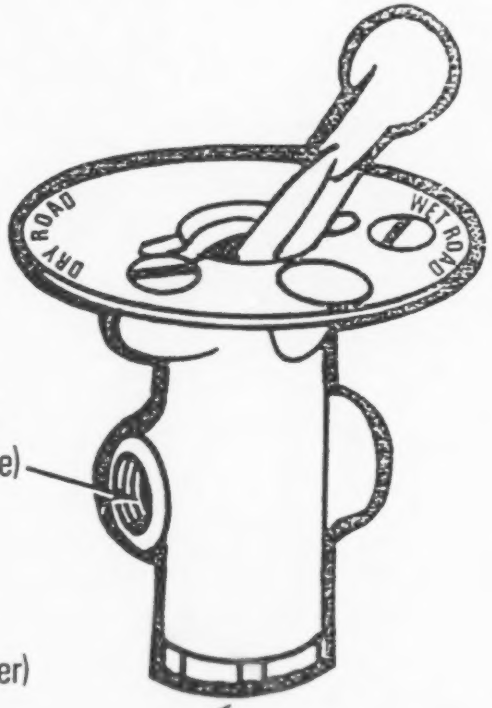
Brake Valve
Port
(From Brake Valve

Cut-Out Valve Port
(From Two-Way
Valve)

Exhaust
Port

Delivery Port
(To Brake Chamber)

Control Valve



Delivery Port
(To Limiting and
Quick Release Valve)

Inlet Port
(From Brake Valve)

4.1-302

SESSION: III

SUBJECT: Skid Control & Recovery

TIME ALLOTTED: 25 Min.

PAGE: 3 - 4

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. To recognize the specific causes of skids and to apply the proper recovery procedures.	1.A. Over braking B. Over steering C. Over acceleration D. Driving too fast E. Drive wheel skids F. Front wheel skids G. Counter steering H. Limiting use of brakes	1. Lecture - Commercial Driver's Manual A.-H. - 2-41, 2-42 6-2, 6-3 1. Overhead Transparencies E.&F. - 3.3-19, 3.3-20 (Skids) 1.A.E.&F. - 3.3-21 (2) 1.A. - 3.3-22 1.F. - 3.3-23 3.3-24 (All Wheel Skids) 3.3-25 (Recovery) Handouts 3.3-25	1. Asking factual and specific questions.
			2. Proficiency Test.

SESSION III

SKID CONTROL AND RECOVERY

Objective

To recognize the specific causes of skids and to apply the proper recovery procedures.

Topic(s)

1. Over braking.
2. Over steering.
3. Over acceleration.
4. Driving too fast.
5. Drive wheel skids.
6. Front wheel skids.
7. Counter steering.
8. Limiting use of brakes.

Techniques/Procedures and Activities

Overhead Transparencies
- 3.3-19
- 3.3-20
- 3.3-21
- 3.3-22
- 3.3-23
- 3.3-24 (All Wheel Skids)
- 3.3-25 (Recovery)

Handouts
- 3.3-25

Lecture: CDLM (Bottom 2-39 to 2-42)

A skid happens whenever the tires lose their grip on the road. This is caused in one of four ways:

Overbraking. Braking too hard and locking up the wheels. Skids also can occur when using the speed retarder when the road is slippery.

Oversteering. Turning the wheels more sharply than the vehicle can turn.

Overacceleration. Supplying too much power to the driver wheels, causing them to spin.

Driving too fast. Most serious skids result from driving too fast for road conditions. Drivers who adjust their driving to conditions don't overaccelerate and don't have to overbrake or oversteer from too much speed.

By far the most common skid is one in which the rear wheels lose traction through excessive braking or acceleration. Skids caused by acceleration usually happen on ice or snow. They can be easily stopped by taking your foot off the accelerator. (If it is very slippery, push the clutch in. Otherwise the engine can keep the wheels from rolling freely and regaining traction.)

Rear wheel braking skids occur when the rear drive wheels lock. Because locked wheels have less traction than rolling wheels, the rear wheels usually slide sideways in an attempt to "catch up" with the front wheels. In a bus or straight truck, the vehicle will slide sideways in a "spin out". With vehicles towing trailers, a drive-wheel skid can let the trailer push the towing vehicle sideways, causing a sudden jackknife (Figure 2-14).

Do the following to correct a drive-wheel braking skid.

Stop braking. This will let the rear wheels roll again, and keep the rear wheels from sliding any further. If on ice, push in the clutch to let the wheels turn freely.

Turn quickly. When a vehicle beings to slide sideways, quickly steer in the direction you want the vehicle to go - down the road. You must turn the wheel quickly.

Countersteer. As a vehicle turns back on course, it has a tendency to keep right on turning. Unless you turn the steering wheel quickly the other way, you may find yourself skidding in the opposite direction.

Learning to stay off the brake, turn the steering wheel quickly, push in the clutch, and counter-steer in a skid takes a lot of practice. The best place to get this practice is on a large driving range or "skid pad".

Most front-wheel skids are caused by driving too fast for conditions. Other causes are: lack of tread on the front tires, and cargo loaded so not enough weight is on the front axle. In a front-wheel skid, the front end tends to go in a straight line regardless of how much you turn the steering wheel. On a very slippery surface, you may not be able to steer around a curve or turn.

When a front-wheel skid occurs, the only way to stop the skid is to let the vehicle slow down. Stop turning and/or braking so hard. Slow down as quickly as possible without skidding.

Steer gently and smoothly when you are pulling trailers. If you make a sudden movement with your steering wheel, you could tip over a trailer. Follow far enough behind other vehicles (at least one second for each ten feet of your vehicle length, plus another second if going over 40 mph). Look far enough down the road to avoid being surprised and having to make a sudden lane change. At night, drive slow enough to see obstacles with your headlights before it is too late to change lanes or stop gently. Slow down to a safe speed **before** going into a turn.

Control your speed whether fully loaded or empty. Large combination vehicles that are empty take longer to stop than when they are fully loaded. When lightly loaded, the very stiff suspension springs and strong brakes give poor traction and make it very easy to lock up the wheels. Your trailer can swing out and strike other vehicles. Your tractor can jackknife very quickly (Figure 6-2). You also must be very careful about driving "bobtail" tractors (tractors without semitrailers). Test have shown that bobtails can be very hard to stop smoothly. It takes them longer to stop than a tractor-semitrailer loaded to maximum gross weight.

In any combination rig, allow lots of following distance and look far ahead, so you can brake early. Don´t be caught by surprise and have to make a "panic" stop.

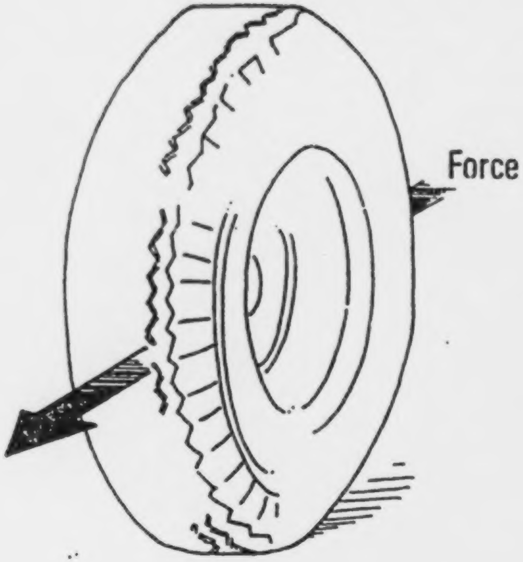
When the wheels of a trailer lock up, the trailer will tend to swing around. This is more likely to happen when the trailer is empty or lightly loaded. This type of jackknife is often called a "trailer jackknife". This is shown in Figure 6-3.

The procedure for stopping a trailer skid is as follows:

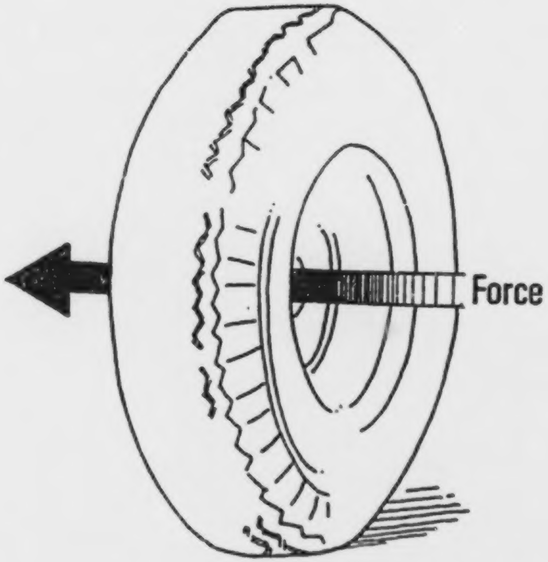
Recognize the skid. The earliest and best way to recognize that the trailer has started to skid is by seeing it in your mirrors. Any time you apply the brakes hard, check the mirrors to make sure the trailer is staying where it should be. Once the trailer wheels grip the road again, the trailer will start to follow the tractor and straighten out.

Types of Skids

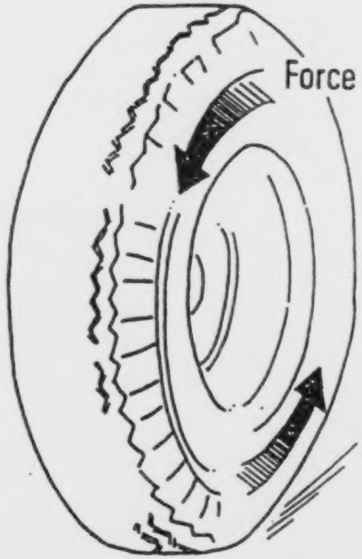
3.3-19



Braking



Turning



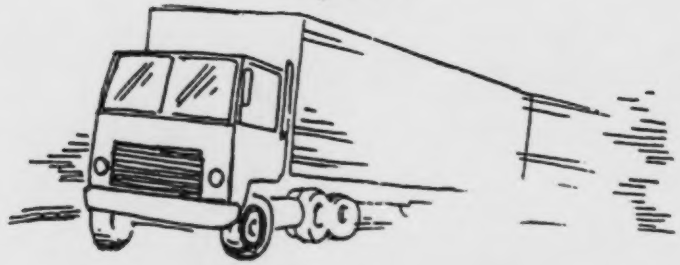
Acceleration

Visual 2

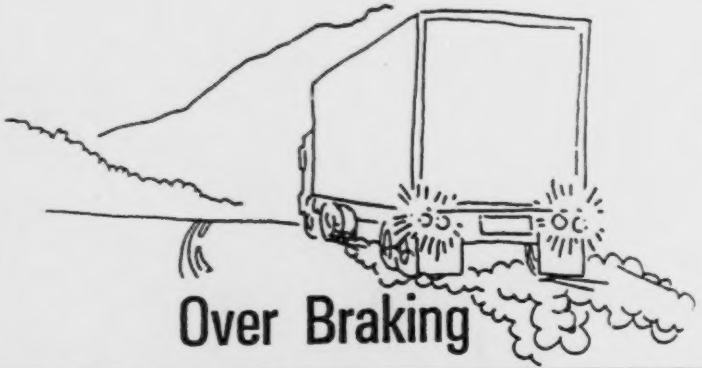
R-11

Conditions That Produce Skids

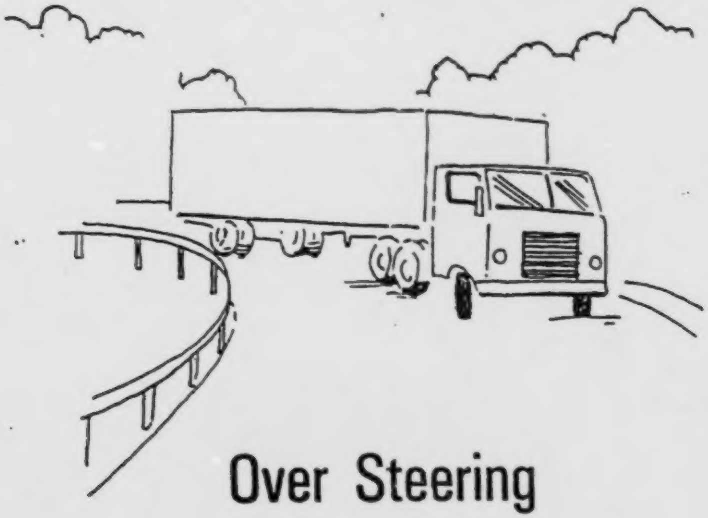
Speed



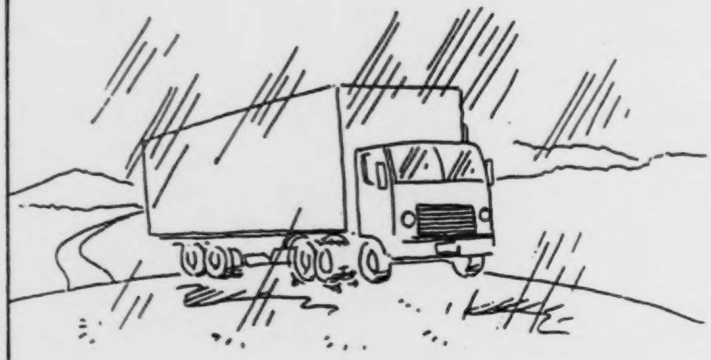
Too Fast for Conditions



Over Braking



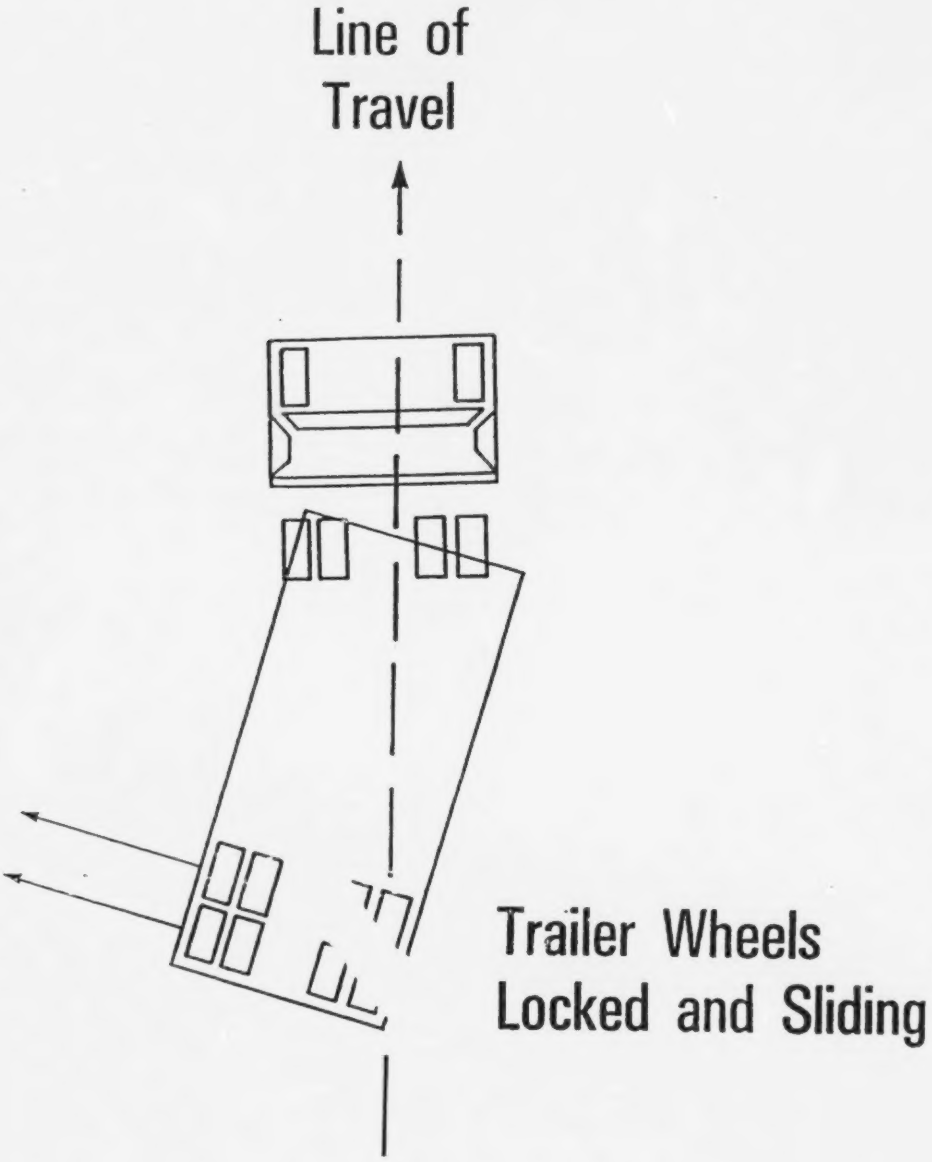
Over Steering



Over Accelerating

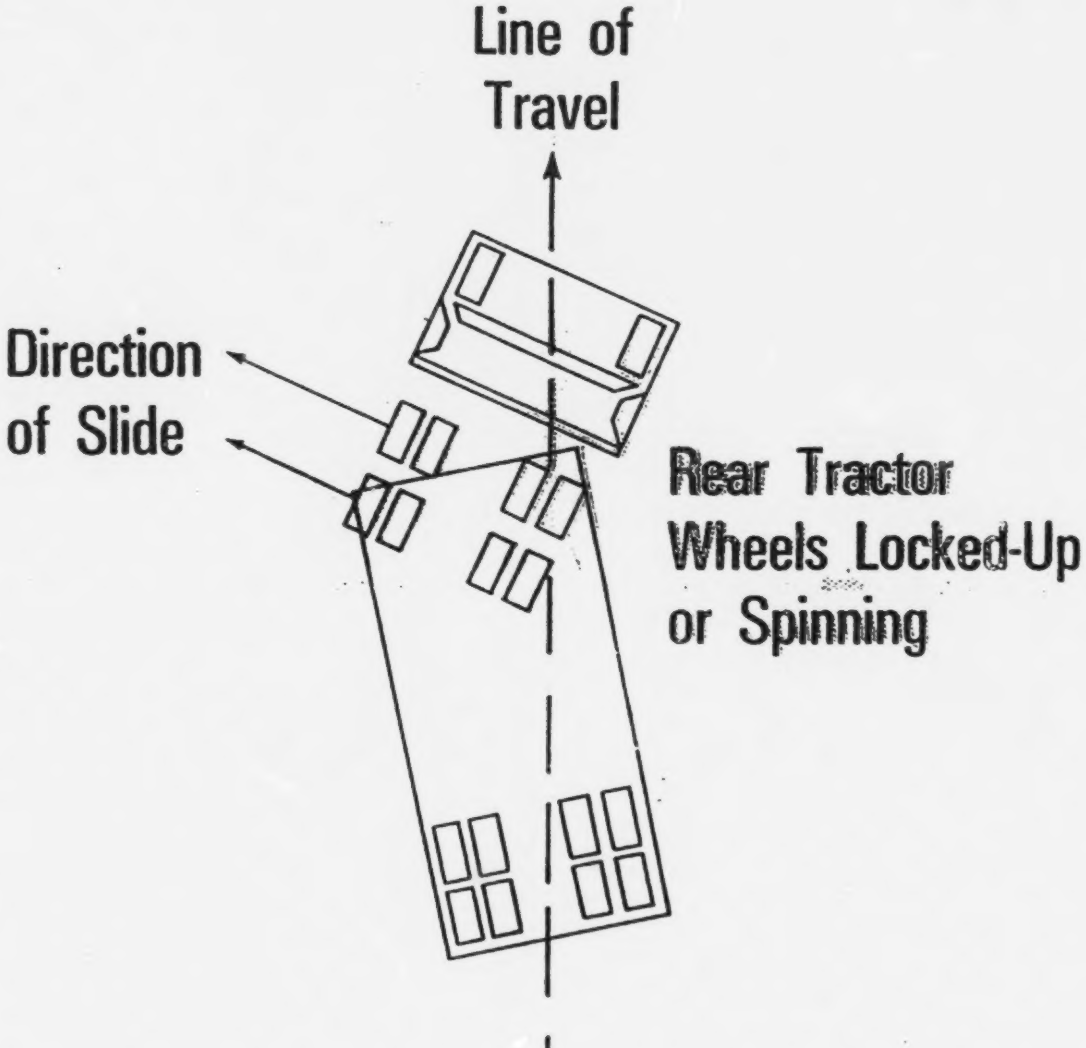
3.3-20

Trailer Jackknife

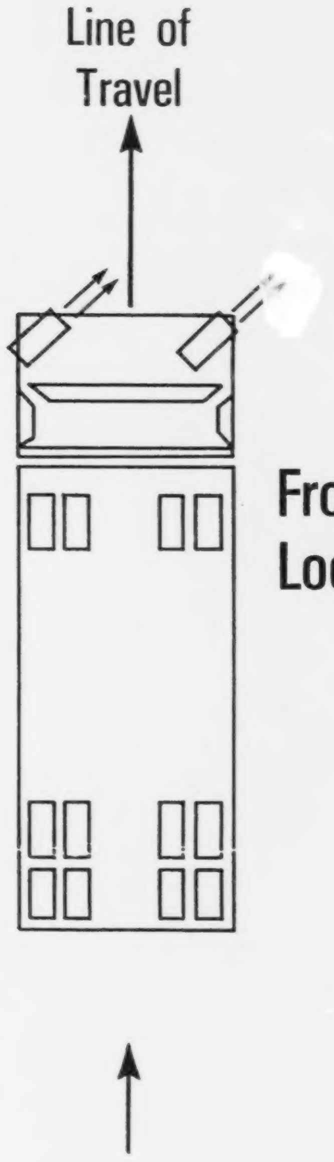

Line of
Travel
Trailer Wheels
Locked and Sliding

Visual 5

Tractor Jackknife

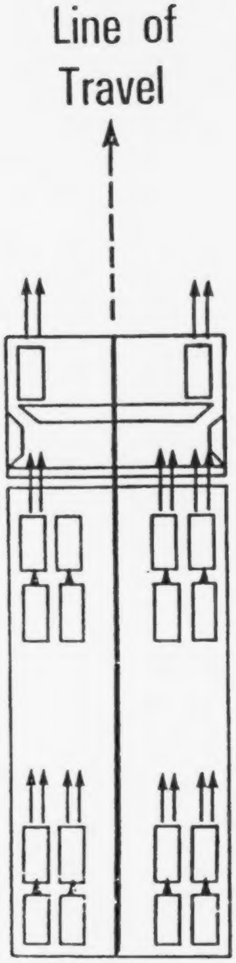

Line of
Travel
Direction
of Slide
Rear Tractor
Wheels Locked-Up
or Spinning

Front Wheel Skid


Line of
Travel

Front Wheels
Locked-Up and Sliding

All Wheel Skid

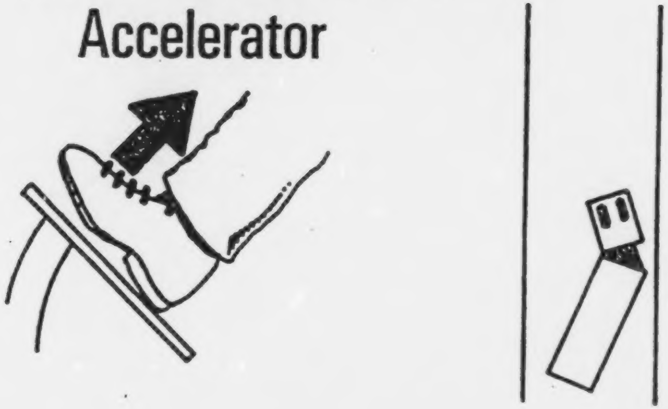

Line of
Travel

All Wheels Locked-up
and Sliding

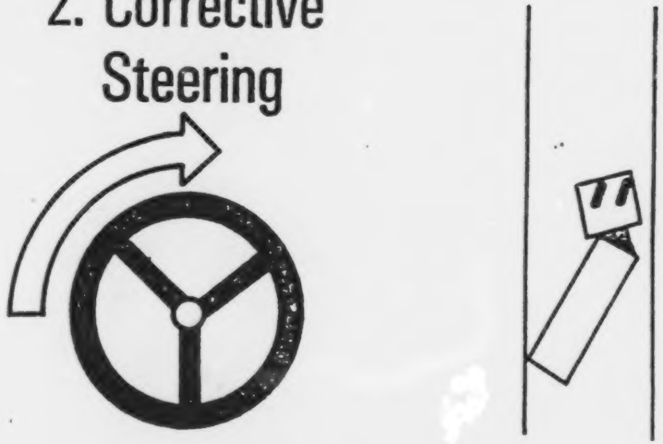
3-15

Skid Recovery

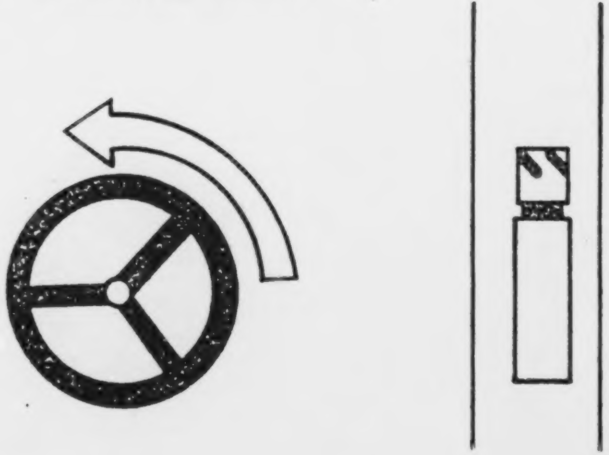
1. Get off Brakes and Accelerator



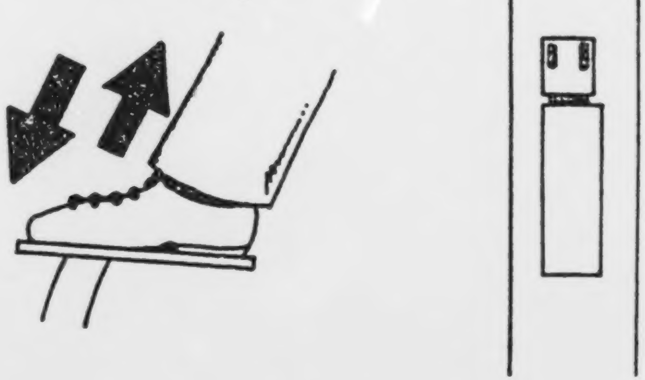
2. Corrective Steering



3. Countersteer



4. Stab Brakes to Stop



Visual 8

SSION: III

SUBJECT: Emergency Maneuvers

TIME ALLOTTED: 20 Min.

PAGE: 3 - 5

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognization of the concepts and principles that result in the avoiding of collisions with other vehicles.	1. Steering to avoid a crash A. Gripping the wheel B. Where to steer C. How much to steer D. Leaving the road E. Braking to avoid a crash F. When not to brake G. What speed to brake H. Controlling the brake I. Stab braking	1. Lecture - Commercial Driver's Manual 2-38, 2-39, 2-40, 2-41	1. Asking factual and specific questions. 2. Proficiency Test.

SESSION III

EMERGENCY MANEUVERS

Objective

Recognition of the concepts and principles that result in the avoiding of collisions with other vehicles.

Topic(s)

Steering to avoid a crash:

1. Gripping the wheel.
2. Where to steer.
3. How much to steer.
4. Leaving the road.
5. Braking to avoid a crash.
6. When not to brake.
7. What speed to brake.
8. Controlling the brake.
9. Stab braking.

Techniques/Procedures and Activities

Lecture: CDLM (2-38 to middle of 2-41)

Traffic emergencies occur when two vehicles are about to collide. **Vehicle** emergencies occur when tires, brakes or other critical parts fail. Following the safety practices in this manual can help prevent emergencies. But if an emergency does happen, your chances of avoiding a crash depend upon how well you take action. Actions you can take are discussed below.

Stopping is not always the safest thing to do in an emergency. When you don´t have enough room to stop, you may have to steer away from what´s ahead. Remember, you can almost always turn to miss an obstacle more quickly than you can stop. (However, top-heavy vehicles and tractors with multiple trailers may flip over.)

Keep Both Hands on the Steering Wheel. In order to turn quickly, you must have a firm grip on the steering wheel with both hands. The best way to have both hands on the wheel if there is an emergency is to keep them there all the time.

How to Turn Quickly and Safely. A quick turn can be made safely, if it's done the right way. Here are some points that safe drivers use:

-- Do not apply the brake while you are turning. It's very easy to lock your wheels while turning. If that happens, you may skid out of control.
-- Do not turn any more than needed to clear whatever is in your way. The more sharply you turn, the greater the chances of a skid or roll-over.
-- Be prepared to "countersteer", that is, to turn the wheel back in the other direction, once you've passed whatever was in your path. Unless you are prepared to countersteer, you won't be able to do it quickly enough. You should think of emergency steering and countersteering as two parts of one driving action.

Where to Steer. If an oncoming driver has drifted into your lane, a move to your right is best. If that driver realizes what has happened, the natural response will be to return to his or her own lane.

If something is blocking your path, the best direction to steer will depend on the situation.

-- If you have been using your mirrors, you'll know which lane is empty and can be safely used.
-- If the shoulder is clear, going right may be best. No one is likely to be driving on the shoulder but someone may be passing you on the left. You will know if you have been using your mirrors.
-- If you are blocked on both sides, a move to the right may be best. At least you won't force anyone into an opposing traffic lane and a possible head-on collision.

Leaving the Road. In some emergencies, you may have to drive off the road. It may be less risky than facing a collision with another vehicle.

Most shoulders are strong enough to support the weight of a large vehicle and, therefore, offer an available escape route. Here are some guidelines, if you do leave the road.

Avoid Braking. If possible, avoid using the brakes until your speed has dropped to about 20 mph. Then brake very gently to avoid skidding on a loose surface.

Keep one set of wheels on pavement if possible. This helps to maintain control.

Stay on the Shoulder. If the shoulder is clear, stay on it until your vehicle has come to a stop. Signal and check your mirrors before pulling back onto the road.

Returning to the Road. If you are forced to return to the road before you can stop, use the following procedure:

-- Hold the wheel tightly and turn sharply enough to get right back on the road safely. Don't try to edge gradually back on the road. If you do, your tires might grab unexpectedly and you could lose control.
-- When both front tires are on the paved surface, **countersteer** immediately. The two turns should be made as a single "steer-countersteer" move.

If somebody suddenly pulls out in front of you, your natural response is to hit the brakes. This is a good response if there's enough distance to stop and you use the brakes correctly.

You should brake in a way that will keep your vehicle in a straight line and allow you to turn if it becomes necessary. You can use the "controlled braking" method or the "stab braking" method.

Controlled braking. With this method, you apply the brakes as hard as you can **without** locking the wheels. Keep steering wheel movements very small while doing this. If you need to make a larger steering adjustment or if the wheels lock, release the brakes. Reapply the brakes as soon as you can.

Stab braking.

-- Apply your brakes all the way.
-- Release brakes when wheels lock up.
-- As soon as the wheels start rolling, apply the brakes fully again. (It can take up to one second for the wheels to start rolling after you release the brakes. If you reapply the brakes before the wheels start rolling, the vehicle won't straighten out.)

Don't Jam on the Brakes. Emergency braking does not mean pushing down on the brake pedal as hard as you can. That will only keep the wheels locked up and cause a skid. If the wheels are skidding, you cannot control the vehicle.

Brakes kept in good condition rarely fail. **Most hydraulic brake failures occur for one of two reasons:** (Air brakes are discussed in Section 5.)
-- Loss of hydraulic pressure.
-- Brake fade on long hills.

Loss of Hydraulic Pressure. When the system won't build up pressure, the brake pedal will feel spongy or go to the floor. Here are some things you can do:

Downshift. Putting the vehicle into a lower gear will help to slow the vehicle.

Pump the brakes. Sometimes pumping the brake pedal will generate enough hydraulic pressure to stop the vehicle.

Use the parking brake. The parking or emergency brake is separate form the hydraulic brake system. Therefore, it can be used to slow the vehicle. However, be sure to press the release button or pull the release lever at the same time you use the emergency brake so you can adjust the brake pressure and keep the wheels from locking up.

Find an escape route. While slowing the vehicle, look for an escape route - an open field, side street or escape ramp. Turning uphill is a good way to slow and stop the vehicle. Make sure the vehicle does not start rolling backward after you stop. Put it in low gear, apply the parking brake, and if necessary roll back into some obstacle that will stop the vehicle.

Brake Failure on Downgrades. Going slow enough and braking properly will almost always prevent brake failure on long downgrades. Once the brakes have failed, however, you are going to have to look outside your vehicle for something to stop it.

Your best hope is an **escape ramp.** If there is one, there´ll be signs telling you about it. Use it. Ramps are usually located a few miles form the top of the downgrade. Every year, hundreds of drivers avoid injury to themselves or damage to their vehicles by using escape ramps. Some escape ramps use soft gravel that resists the motion of the vehicle and brings it to a stop. Others turn uphill, using the hill to stop the vehicle and soft gravel to hold it in place.

Any driver who loses brakes going downhill should use an escape ramp if it´s available. If you don´t use it, your chances of having a serious crash may be much worse.

if no escape ramp is available, take the least hazardous escape route you can - such as an open field, or a side road that flattens out or turns uphill. Make the move as soon as you know your brakes don´t work. The longer you wait, the faster the vehicle will go and the harder it will be to stop.

There are four important things that safe drivers do to handle a tire failure safely:
-- Be aware that a tire has failed.
-- Hold the steering wheel firmly.
-- Stay off the brake.
-- After stopping, check all the tires.

Recognize Tire Failure. Quickly knowing you have a tire failure will let you have more time to react. Having just a few seconds to remember what it is you´re supposed to do can help you. the major signs of tire failure are:

Sound. The loud "bang" of a blowout is an easily recognized sign. Because it can take a few seconds for your vehicle to react, you might think it was some other vehicle. But any time you hear a tire blow, you´d be safest to assume it was yours.

Vibration. If the vehicle thumps or vibrates heavily, it may be a sign that one of the tires has gone flat. With a rear tire, that may be the only sign you get.

Feel. If the steering feels "heavy", it is probably a sign that one of the front tires has failed. Sometime, failure of a rear tire will cause the vehicle to slide back and forth or "fishtail". However, dual rear tires usually prevent this.

Any of the signs is a warning of possible tire failure. You should do the following things.

Hold the Steering Wheel Firmly. If a front tire fails, it can twist the steering wheel out of your hand. The only way to prevent this is to keep a firm grip on the steering wheel with both hands at all times.

**** Stay Off the Brake.** It´s natural to want to brake in an emergency. However, braking when a tire has failed could cause loss of control. Unless you´re about to run into something, stay off the brake until the vehicle has slowed down. Then brake very gently, pull off the road, and stop.

Check the Tires. After you´ve come to a stop, get out and check all the tires. Do this even if the vehicle seems to be handling all right. If one of your dual tires goes, the only way you may know it is by getting out and looking at it.

**** NOTE! NEW TRAINING SAYS TO ACCELERATE TO GAIN CONTROL THEN APPLY BRAKE GENTLY AND PULL OVER. CAUTION! ANSWER TEST QUESTION ACCORDING TO ABOVE TEXT AND DRIVE ACCORDING TO NOTE.**

SE ION: III

SUBJECT: Emergency Reporting

TIME ALLOTTED: 15 Min.

PAGE: 3 - 6

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognition of the basic procedures to be taken in case of accidents.	1.A. Protect the area B. Notify the authorities C. Care for the injured	1. Lecture - Commercial Driver´s Manual A.-C. - 2-43 1. Overhead Transparencies 1.A. 5.4-19, 5.4-20 5.4-22 (Warning Device) 5.4-23 (Placement) 5/4-24 (Placement)	1. Asking factual and specific questions.
		2. Visual #1 for use in truck	2. Proficiency Test.

SESSION III

EMERGENCY REPORTING

Objective

Recognition of the basic procedures to be taken in case of accidents.

Topic(s)

1. Protect the area.
2. Notify the authorities.
3. Care for the injured.

Techniques/Procedures and Activities

Overhead Transparencies
    5.4-19
    5.4-20
    5.4-22 (Warning Device)
    5.4-23 (Placement)
    5.4-24 (Placement)

Lecture: CDLM (Top 2-43)

When you´re in an accident and not seriously hurt you need to act to prevent further damage or injury. The basic steps to be taken at any accident are to:

-- Protect the area.
-- Notify authorities.
-- Care for injured.

The first thing to do at an accident scene is to keep another accident from happening at the same spot. To protect the accident area:
-- If your vehicle is involved in the accident, try to get it to the side of the road. This will help prevent another accident and allow traffic to move.
-- If you´re stopping to help, park away from the accident. The area immediately around the accident will be needed for emergency vehicles.
-- Put on your flashers.
-- Set out reflective triangles to warn other traffic. Make sure they can be seen by other drivers in time for them to avoid the accident. (Max. time 10 minutes)
If you have a CB, put out a call over the emergency channel before you get out of your vehicle. If not, wait until after the accident scene has been properly protected, then phone or send someone to phone the police. Try to determine where you are so

you can give the exact location.

If a qualified person is at the accident and helping the injured, stay out of the way unless asked to assist. Otherwise, do the best you can to help any injured parties. Here are some simple steps to following in giving assistance:

-- Don´t move a severely injured person unless the danger of fire or passing traffic makes it necessary.
-- Stop heavy bleeding by applying direct pressure to the wound.
-- Keep the injured person warm.

Visual 1

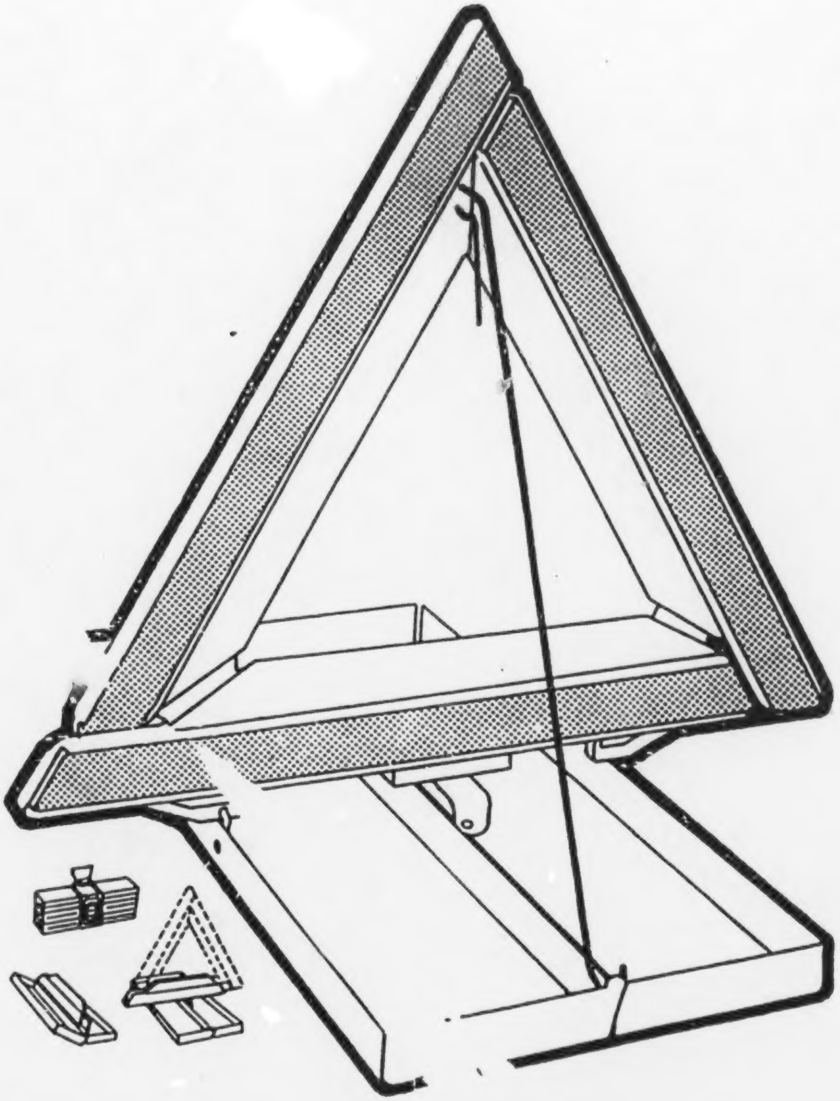
Steps to Take at the Scene of an Accident

- Stop
- Protect the Scene to Prevent Further Accidents
- Aid the Injured
- Notify Police and Call an Ambulance if Necessary
- Notify Your Employer
- Collect the Facts
- Conduct Yourself Properly
- Give Required Identification
- Remain at the Scene Until All Requirements Are Met

5-4-19

Visual 2

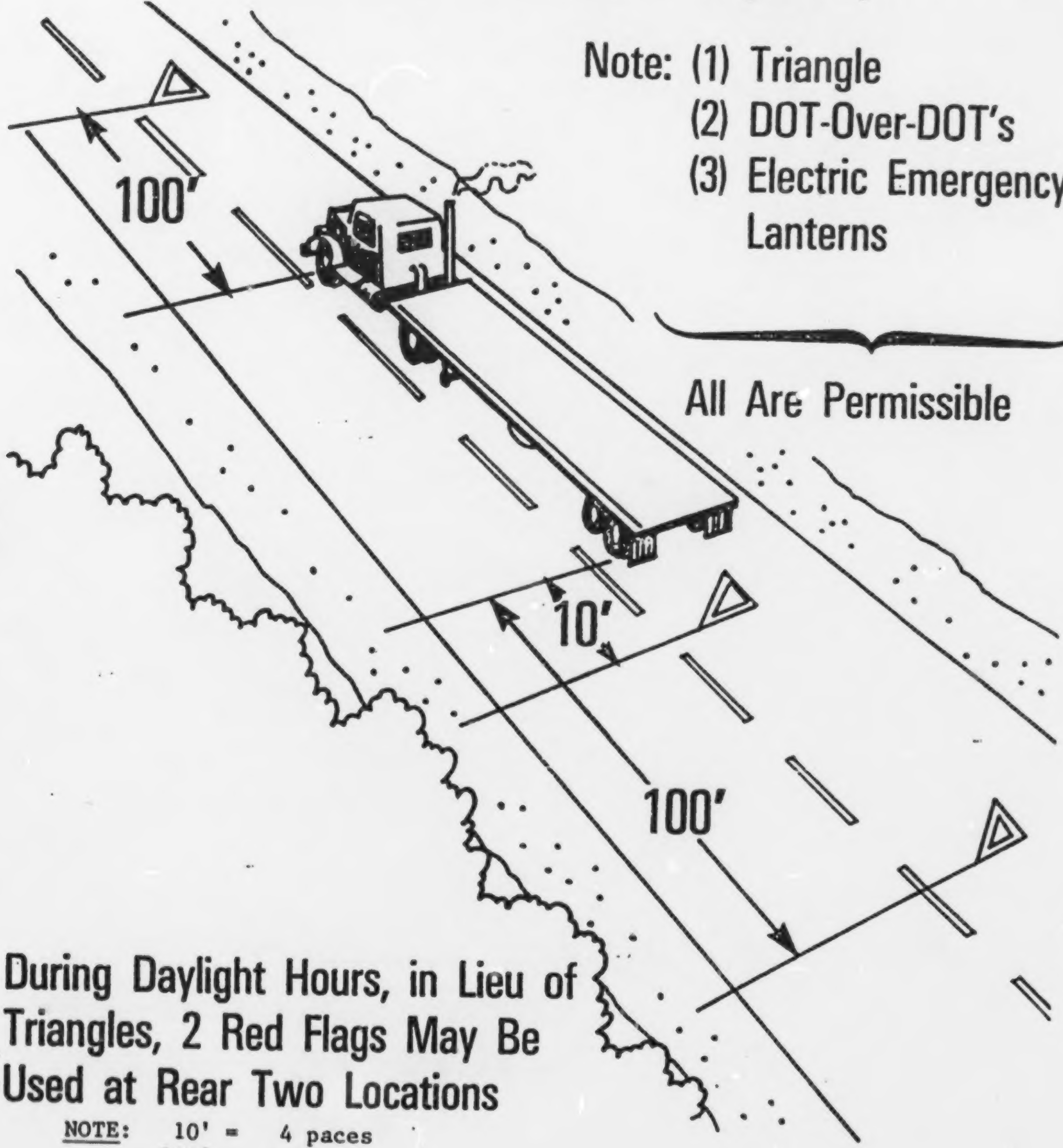
Emergency Reflective Triangles



Visual 4

Emergency Warning Devices

Two Lane or Undivided Highway



Note:
(1) Triangle
(2) DOT-Over-DOT's
(3) Electric Emergency Lanterns

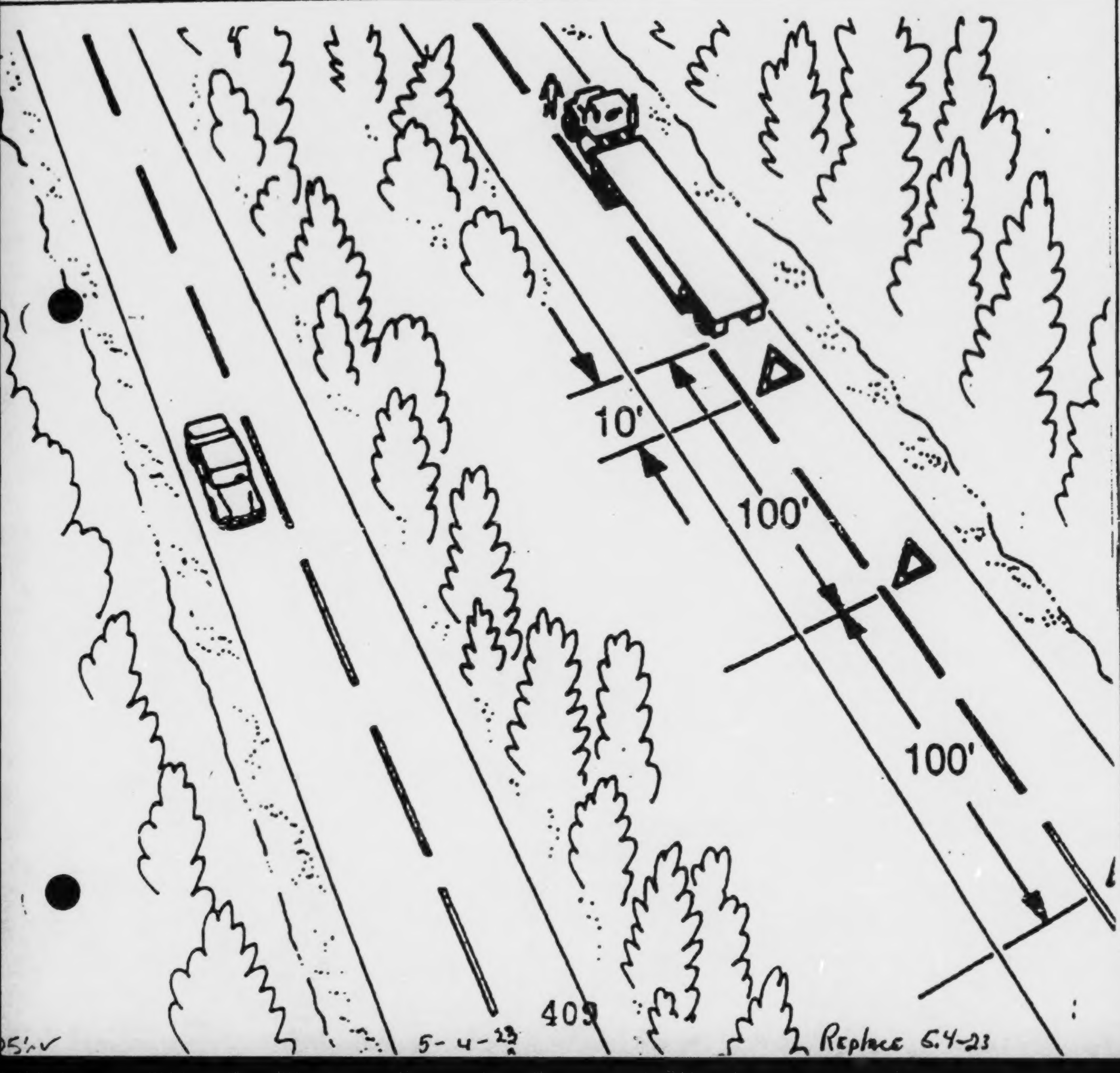
All Are Permissible

During Daylight Hours, in Lieu of Triangles, 2 Red Flags May Be Used at Rear Two Locations

NOTE:
10' = 4 paces
100' = 40 paces
200' = 80 paces
500' = 200 paces

Emergency Warning Devices

One-Way or Divided Highway

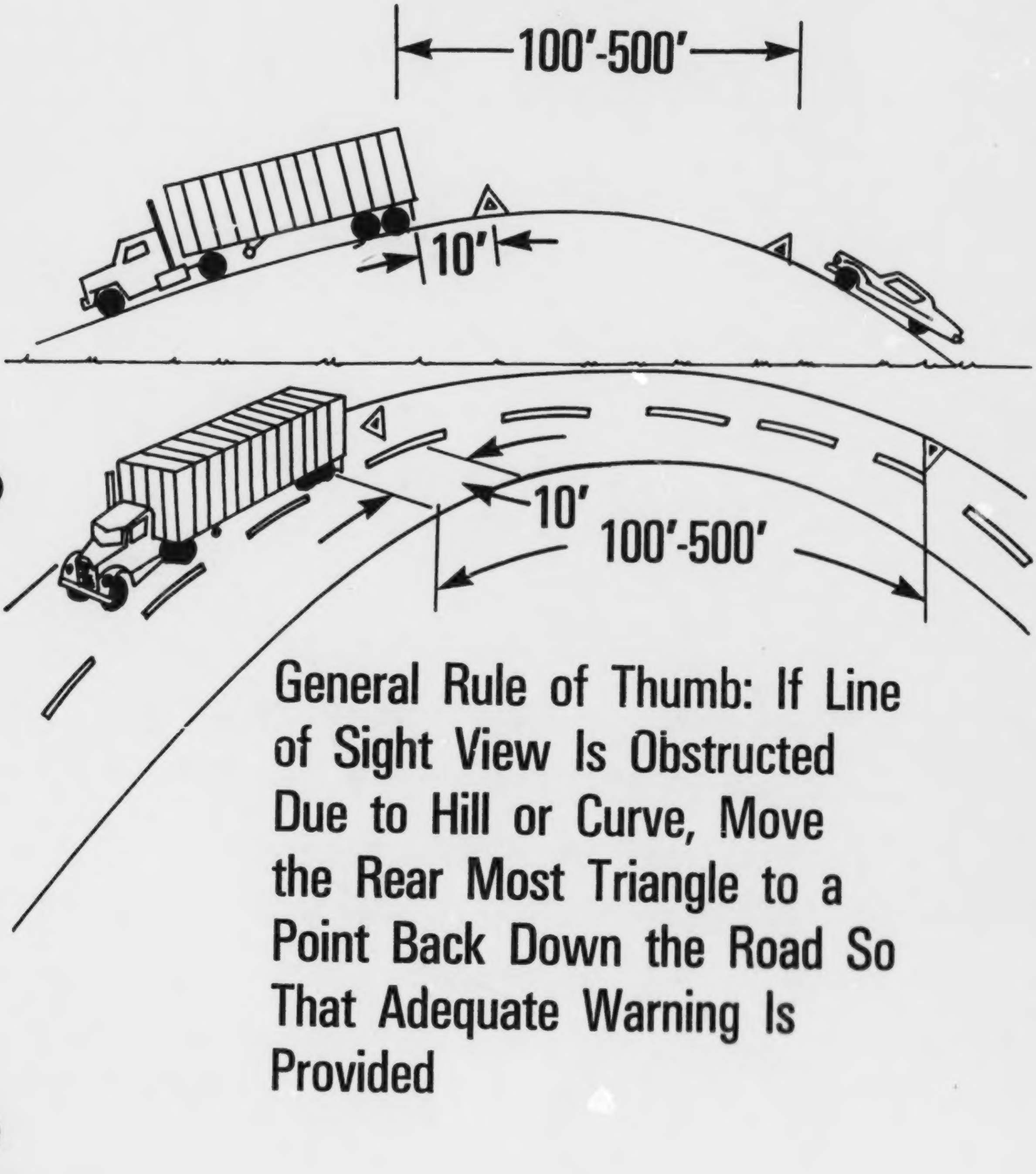


5-4-23

Replace 5.4-23

Emergency Warning Devices

Obstructed View



General Rule of Thumb: If Line of Sight View Is Obstructed Due to Hill or Curve, Move the Rear Most Triangle to a Point Back Down the Road So That Adequate Warning Is Provided

SESSION: III

SUBJECT: Test Taking Skills

TIME ALLOTTED: 30 Min.

PAGE: 3 - 7

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Describe content for Session III.	1. Content sheet	1. Overhead Transparency Handout	1. Asking factual and specific questions.
2. Redefine strategies for test taking.	2.A. General test taking strategies.	2.A. Lecture - Text from manual. A. Overhead Transparencies	2. Proficiency Test
3. Understanding when to skip parts of a standardized test.	3. Skipping parts of the test.	3. Sample test, discussion, lecture wrap up.	
4. Understanding the importance of checking your answers	4. Checking your answers	4.A. Lecture - text from manual. B. Sample questions.	
5. Understanding procedure at the end of taking a test.	5. Checking your work.	5.A. Lecture - text from manual. B. Sample test.	

INSTRUCTORS NOTE!

WATCH THE TIME, 80 QUESTIONS TOTAL!!!!

SESSION III

LESSON 7.1 CONTENT FOR T.T. SKILLS SESSION III
Title

Overview

Time Allotted:

Prerequisites:

Purpose: Describe content of Session III's T.T. skills component.

Materials

Instructional Aids:

Student Materials: Handout

Instructor Materials: Overhead Transparency

Content

Activity or Topic	Approximate Time
Lecture: Quick description of content page.	

SESSION III

1. Content for TT Skills, Session III.
2. Redefine strategies for test taking.
3. Skipping parts of the test.
4. Understanding the importance of checking your answers.
5. Understanding the step by step procedure before handing in a test.

960✓

SESSION III

LESSON 7.2 REDEFINE STRATEGIES FOR T.T. SKILLS
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To redefine the strategies for T.T. skills.

Materials

Instructional Aids:

Student Materials: Handout

Instructor Materials: Overhead Transparency

Content

Activity or Topic	Approximate Time
Lecture: From overhead quickly repeat the strategies for T.T. skills.	

There are five principles for test taking strategies. They are:

1. Reduce anxiety;
2. Follow instructions;
3. Use time wisely;
4. Ways to attack difficult problems;
5. How to make shrewd guesses.

Discuss each of the strategies. Ask questions of the class for their input.

1. Reduce anxiety:
    A. Best is through knowledge of the material;
    B. Practice at taking standardized tests;
    C. Go back to most difficult questions;
    D. Discussion of personal ways of eliminating stress.

Test-Taking Strategies

Five Principles

1. Reduce anxiety;
2. Follow instructions;
3. Use time wisely;
4. Ways to attack difficult problems;
5. How to make shrewd guesses.

GENERAL TEST-TAKING STRATEGIES

A. TIME-USING STRATEGIES

1. Set up a schedule for progressing through the test.
2. Work as rapidly as possible with reasonable assurance of accuracy.
3. Answer the easiest questions first.
4. On scrap paper, keep a record of the items to which you would like to go back.
5. Use time remaining after completion of the test to go back and look at your answers.

B. ERROR-AVOIDANCE STRATEGIES

1. Pay careful attention to directions. Determine the nature of the task.
2. Determine the nature of the question.
3. Ask the examiner for clarification, when necessary, if it is permitted.
4. If you are using a separate answer sheet, make sure to record the answer in the correct position on the sheet.

C. GUESSING STRATEGY

Don't make wild guesses. Many times you can get the correct answer by a process of reasoning and eliminating wrong answers.

D. MISCELLANEOUS TIPS

1. Only change an answer if you are sure the first one you picked was wrong.
2. Examine carefully all possible responses before attempting to choose the correct answer.
3. Use relevant content information provided in other test items.
4. Tackle items one at a time rather than thinking about the whole test.
5. Do not expect to find a pattern in the positions of the correct choices.

SESSION III

LESSON 7.3 SKIPPING PARTS OF THE TEST
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To explain why and how a student skips parts of a test.

Materials

Instructional Aids:

Student Materials: Sample Test

Instructor Materials:

Content

Activity or Topic	Approximate Time
Do sample test. Give correct answers. Short discussion on why. (Answer: 1. Reduce anxiety 2. Use of time 3. Facilitate educated quessing) at end of discussion. Lecture: Some questions on a test seem easy. Answer those questions first. When you get to a question that seems too hard, skip that question. Answer the questions that you are sure you know. When you have time, go back to the questions you skipped.	

7.3

____

. Try to answer __________ of the test questions.

○ all ○ part ○ six ○ ten

2. Reread __________ of the answers you picked.

○ before ○ all ○ for ○ under

3. Make sure you marked the __________ answer for each question.

○ wrong ○ best ○ second ○ last

4. Change an answer only if you are sure that you marked it __________ at first.

○ right ○ wrong ○ fast ○ slow

SESSION III

LESSON 7.4 UNDERSTANDING THE IMPORTANCE OF CHECKING YOUR ANSWERS
Title

Overview

Time Allotted:

Prerequisites:

Purpose: To explain how and why a student checks their answers.

Materials

Instructional Aids:

Student Materials: Sample Test

Instructor Materials:

Content

Activity or Topic	Approximate Time
Give sample test. Give answers. Discuss. Lecture: wrap up: Answer as many test questions as you can. Reread all your work. Make sure you picked the best answer for each question. Change an answer only if you are sure it is wrong.	

7.4

As you go through a test do ________.

○ the easy questions first
○ the hard questions first
○ the easy questions last
○ each question in order

2. At first you should ________.

○ skip the easy questions
○ skip the hard questions
○ do every question
○ work very slowly

3. After you have answered all the questions you are sure about, ______.

○ stop working and look around
○ tell your teacher what you have done
○ go home and tell someone
○ go back and try the hard questions

SESSION III

LESSON 7.5 UNDERSTANDING THE PROCEDURE AT THE END OF TAKING A TEST

Title

Overview

Time Allotted:

Prerequisites:

Purpose: To understand the procedure at the end of taking a test.

Materials

Instructional Aids:

Student Materials: Handout

Instructor Materials: Overhead Transparency

Content

Activity or Topic	Approximate Time
Lecture: The single reason for the greatest number of incorrect answers on standardized tests is the failure to check answers at the end of the test. (Question of the class: "What kinds of things does a person look for when checking answers at the end of a test?" Answer: 1. Wrong answers. (Caution: never change an answer unless you're sure it's wrong.) 2. Unanswered questions 3. Incomplete answer sheet. 4. Incorrect answer sheet Then discuss handout and overhead.	

PROCEDURE FOR THE END OF THE TEST

1) GO BACK AND COMPLETE ALL SKIPPED QUESTIONS.

2) MAKE SURE ALL ANSWERS ARE FILLED IN ON THE ANSWER SHEET.

3) MAKE SURE EACH ANSWER FILLED IN MATCHES THE RIGHT QUESTION I.E. ANSWER #3 WITH QUESTION #3.

NOTE

Please remind students that have not filled out a CDL Application to do so NOW!!!

S[illegible]ION: III

SUBJECT: Proficiency Test

TIME ALLOTTED: 85 Min.

PAGE: 3 - 8

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
Knowledge of student material covered in this and previous sessions.	84 Questions	Test, answer sheet.	80% passage, (maximum allowed 16 wrong). 1.2 each.

Revised 9/27/89
Revised 6/11/90

SESSION III

Test 3

Name: ______________________________

1. Which of the following could put you out of service:
   a) brakes
   b) cracked rim
   c) broken air line
   d) all of the above

2. When should you do your pre-trip inspection if you start your run at 3:30 a.m.?
   a) 8:00 a.m.
   b) Noon, when you catch up on your log
   c) coffee break
   d) before you start your trip

3. When starting your truck, what is the first thing you should look for?
   a) air pressure
   b) oil pressure
   c) cooled tires
   d) none of the above

4. When checking your controls, which would be the most important?
   a) steering
   b) clutch
   c) accelerator
   d) none of the above

5. Drivers must inspect their vehicle within the first 25 miles of a trip and every ___ miles afterwards?
   a) 150
   b) 75
   c) 180
   d) 200

6. What is the minimum amount of time your walk-around inspection should take?
   a) 15 minutes
   b) 25 minutes
   c) 30 minutes
   d) 5 minutes

7. To adjust manual slack adjusters, what size wrench or socket should be used?
   a) 9/16
   b) 5/8
   c) 3/4
   d) 1/2

8. With the engine at operating RPM, the air pressure in a dual system should build from 85 to 100 psi within __ seconds.
   a) 35
   b) 45
   c) 55
   d) 60

9. What does a drop arm wig-wag do?
    a) warns of low air pressure
    b) drops down into drivers view
    c) both of the above
    d) none of the above

10. The air system parking brake should be tested while the vehicle is:
    a) parked
    b) moving slowly
    c) going downhill
    d) none of the above

11. You are checking your wheels and rims during a pre-trip inspection. Which of these statements is true?
    a) rust around wheel nuts may mean that they are loose
    b) cracked wheels or rims can be used if they have been welded
    c) mismatched lock rings can be used on the same vehicle
    d) mismatched wheels can be used

12. If a straight vehicle (no trailer or articulation) goes into a front-wheel skid, it will:
    a) slide sideways and spin out
    b) go straight ahead but will turn if you turn the steering wheel
    c) go straight ahead even if the steering wheel is turned
    d) slide sideways and stop

13. How do you test hydraulic brakes for a leak?
    a) move the vehicle slowly and see if it stops when the brake is applied
    b) with the vehicle stopped, pump the pedal three times, apply firm pressure, then hold for five (5) seconds and see if the pedal moves
    c) step on the brake pedal and the accelerator at the same time and see if the vehicle moves
    d) step on the brake hard while going 20 mph

14. Which of these is the most important thing to remember about emergency braking?
    a) disconnecting the steering axle brakes will keep the vehicle in a straight line
    b) never do it without downshifting first
    c) if the wheels are skidding, you cannot control the vehicle
    d) never do it without clutching

15. You are traveling down a long, steep hill. Your brakes begin to fade and then fail. What should you do?
    a) downshift
    b) pump the brake pedal
    c) look for an escape ramp or escape route
    d) none of the above

16. How do you correct a rear-wheel acceleration skid?
    a) increase acceleration to the wheels
    b) apply the brake
    c) stop accelerating and push in the clutch
    d) apply brake and push in on the clutch

17. You should avoid driving through deep puddles or flowing water. But if you must, what will keep your brakes working?
    a) gently pressing the brake pedal while driving through the water
    b) applying hard pressure on both the brake pedal and accelerator after coming out of the water
    c) disconnecting the steering axle brakes after coming out of the water
    d) none of the above

18. Which of these statements about brakes is true?
    a) the heavier a vehicle or the faster it is moving, the more heat the brakes have to absorb to stop it
    b) brakes have more stopping power when they get very hot
    c) brake drums cool very quickly
    d) none of the above

19. Stab braking:
    a) should never be used
    b) involves locking the wheels
    c) involves steady pressure on the brake pedal
    d) involves heavy on and off braking action without locking wheels

20. If your right front tire drops off the edge of the paved surface, you should:
    a) stay on the shoulder till you stop
    b) grip wheel, off accelerator, off brake
    c) move slightly to right, off accelerator, on brake
    d) hand on brakes and turn to the left

21. A spring brake applies:
    a) when air is applied
    b) when air is lost
    c) both of the above
    d) when air is over 150 pounds

22. Failure to drain air tanks invites what problem?
    a) excessive levels of air pressure in brake lines
    b) excessive levels of brake application
    c) excessive levels of moisture in brake system
    d) excessive levels of brake pressure

23. In using your mirrors what would you see:
    a) right side
    b) left side
    c) trailer drifting
    d) all of the above

24. To correct a drive wheel braking skid, you should:
   a) Stop braking, turn quickly and countersteer
   b) Increase braking
   c) Increase braking, turn quickly, and countersteer
   d) B & C

25. Brakes can get wet when you drive through a heavy rain. Wet brakes can cause:
   a) wheel lockup
   b) trailer jackknife
   c) both of the above
   d) none of the above

26. You are checking your steering and exhaust systems during a pre-trip inspection. Which of these statements is true?
   a) steering wheel play of more than 10 degrees (2 inches on a 20-inch steering wheel) can make it hard to steer)
   b) leaks in the exhaust system are not a problem if they are outside the cab
   c) some leakage of power steering fluid is normal
   d) none of the above

27. Your vehicle is in a traffic emergency and may collide with another vehicle if you do not take action. Which of these is a good rule to remember at such a time?
   a) stopping is always the safest action in a traffic emergency
   b) heavy vehicles can almost always turn more quickly than they can stop
   c) leaving the road is always more risky than hitting another vehicle
   d) none of the above

28. Spring brakes should automatically come on when the air pressure falls to
   a) 20 - 40 pounds
   b) 40 - 50 pounds
   c) 50 - 60 pounds
   d) 65 - 70 pounds

29. Controlled braking is also called
   a) squeeze braking
   b) stab braking
   c) feather braking
   d) none of the above

30. How many inches should your slack adjuster rod travel when you apply your brakes?
   a) 5"
   b) 6"
   c) 2"
   d) 1"

31. The limit for the length of any single motor vehicle, except for auxiliary parts, is:
   a) 40 feet
   b) 45 feet
   c) 50 feet
   d) 60 feet

32. For an average driver, driving 55 mph on dry pavement, it will take about ___ to bring the vehicle to a stop:
   a) twice the length of the vehicle
   b) half the length of a football field
   c) the length of a football field
   d) the length of two football fields

33. You are driving a heavy vehicle and must exit a highway using an offramp that curves downhill. You should:
   a) use the posted speed limit for the offramp
   b) slow down to a safe speed before the turn
   c) wait until you are in the turn before downshifting
   d) use regular road speed limits

34. How far should a driver look ahead of the vehicle while driving?
   a) 9 - 12 seconds
   b) 12 - 15 seconds
   c) 18 - 21 seconds
   d) 21 - 40 seconds

35. The most common cause of serious vehicle skids is:
   a) driving too fast for road conditions
   b) poorly adjusted brakes
   c) bad tires
   d) blow outs

36. What should you do if your vehicle hydroplanes?
   a) start stab braking
   b) accelerate slightly
   c) release the accelerator
   d) stop

37. When must you wear a seat belt?
   a) at all times while driving a commercial vehicle
   b) when fueling
   c) while checking your tires
   d) while your bob tailing across town

38. An engine brake or retarder:
   a) saves wear and tear on cylinder walls
   b) saves wear and tear on brake linings
   c) saves wear and tear on brake lines
   d) saves on tires

39. What is the proper brake application for descending long grades?
   a) short, hard pumps
   b) light, steady applications
   c) alternating hard and light
   d) use only when need to stop

40. When is a wet road slickest?
   a) just as it beings to rain
   b) when the wind is also blowing
   c) when it has rained for an hour
   d) when there are leaves on the road

41. At what air pressure will your air (spring) brakes lock up?
   a) 75 - 95
   b) 50 - 60
   c) 50 - 58
   d) 20 - 40

42. What connects the tractor and trailer air system?
   a) glad hands
   b) push rods
   c) spring brakes
   d) pedal valve

43. What controls the travel distance of the push rod on an air brake system:
   a) tractor protection valve
   b) wet tank reservoir
   c) quick release valve
   d) the slack adjuster

44. What restricts the air flow to the front brakes?
   a) the emergency relay valve
   b) the governor
   c) the brake chamber
   d) none of the above

45. What system operates when the air is exhausted?
   a) the wet tank reservoir
   b) the quick release valve
   c) the emergency brake system
   d) the emergency relay valve

46. In case of emergency where trailer is lost, what prevents air loss in the tractor?
   a) air dryer
   b) foot adjuster
   c) tractor protection valve
   d) none of the above

47. What component supplies air to the trailer reservoirs?
   a) service brake
   b) brake limiting device
   c) push rod
   d) compressor

48. The air compressor system has two by products that are bad for the air brake system. They are:
   a) air and sand
   b) sand and oil
   c) water and oil
   d) all of the above

49. In a newer vehicle, with air brakes, how can you determine which is the parking brake control?
   a) diamond shaped block
   b) red octagon
   c) diamond shaped yellow
   d) none of the above

50. In some vehicles, a control handle on the dashboard may be used to help apply:
   a) parking brake control
   b) duel brake system
   c) spring brakes
   d) low pressure warning

51. The front brake limiting valve was put on vehicles sometime before 1975. These front brake limiting valves help to reduce:
   a) rear wheel jackknifing
   b) drive wheel slipping
   c) stability
   d) the chance of front wheel skids on a slippery surface

52. The low air pressure warning signal should come on at how many pounds?
   a) 45
   b) 40
   c) 55
   d) 60

53. The air supply pressure gauge indicates what?
   a) amount of fuel consumed
   b) pressure limit on air tanks
   c) how much pressure in the air tanks
   d) all of the above

54. On large buses, it is common for the low pressure warning device to come on between how many psi´s?
   a) 70 - 80
   b) 60 - 65
   c) 80 - 85
   d) 90 - 95

55. The air compressor governor will cut in and repump the air tanks at what amount of pounds or psi´s?
a) 90
b) 100
c) 115
d) 125

56. A fully charged air system usually has around how many psi´s?
a) 130
b) 125
c) 115
d) 90

57. In taking a multiple choice test, your job is to:
a) get done as quickly as possible
b) guess wildly
c) take your time and guess
d) pick the best possible answer

58. Before driving a truck with a dual air brake system, allow time for the air compressor to build up a minimum of
a) 100 pounds
b) 200 pounds
c) 50 pounds
d) 20 pounds

59. At 60 psi in either air system,what should happen
a) horn blow
b) buzzer comes on
c) warning light comes on
d) b and c

60. A dual air brake system has two separate air brake systems, which operate with ___ set(s) of controls
a) single
b) triple
c) double
d) none of the above

61. Brake drum rings or disks must not have cracks longer than ___ the width of the friction area
a) 1/3
b) 1/4
c) 1/2
d) 3/4

62. How do you test an air system parking brake?
a) While driving down the road?
b) While the truck is stopped gently pull against it?
c) While backing?
d) None of the above.

63. When dealing with tailgaters, what should you do?
a) avoid quick lane changes
b) don´t speed up
c) increase your following distance
d) all of the above

64. When following another vehicle, when are you required to lower your headlights:
a) within 500´
b) within 200´
c) within 150´
d) within 1000´

65. When you must back with a truck you should always:
a) back as fast as possible
b) back on your blind side
c) never use a helper
d) always back as slowly as possible

66. In winter driving what would you check before leaving on a trip:
a) defrosters
b) heaters
c) wipers
d) all of the above

67. How much tread depth on rear tires is required by FMCR and the State of NH?
a) 4/32
b) 8/32
c) 2/32
d) 6/32

68. When you are broken down on an Interstate highway, how long do you have from the time you stop until you are required to put out your triangles?
a) 40 min.
b) 10 min.
c) 60 min.
d) 20 min.

69. Which of these statements about tires and hot weather driving is true?
a) if a tire is too hot to touch, you should drive on it to cool it off
b) kissing tires are all right
c) you should inspect your tires more often
d) recapped tires are less likely to fail in hot weather than new tires

70. Whenever you double your speed it takes about___times as much distance to stop:
a) 2 times
b) 4 times
c) 3 times
d) 5 times

71. How do you check for ice on your vehicle to confirm it on the road?
a) touch the front of the mirror
b) touch the antenna
c) touch the mirror support arm
d) all of the above

72. With properly adjusted headlamps on low beam, you can only see ahead about ___ feet
a) 100
b) 150
c) 200
d) 250

73. Which of these are road hazards?
a) drunk drivers
b) road construction
c) poor lighting
d) all of the above

74. The use of a retarder when your wheels have poor traction could cause:
a) nothing
b) skids
c) turning to the right
d) none of the above

75. As you go through a test, do
a) the easy questions first
b) the hard questions first
c) the easy questions last
d) each question in order

76. The first time through a test you should:
a) skip the easy questions
b) skip the hard questions
c) do every question
d) work very slowly

77. After you have answered all the questions you are sure about,
a) stop working and look around
b) tell your teacher what you have done
c) go home and tell someone
d) go back and try the hard questions

78. Reread ___ of the answers you picked.
a) none
b) all
c) fourteen
d) none of the above

79. Make sure you marked the ___ answer for each question.
a) wrong
b) best
c) second
d) last

80. Change an answer only if you are sure that you marked it ___ at first.
a) right
b) wrong
c) fast
d) slow

81. The key word where asks for a ___.
a) time
b) place
c) thing
d) reason

82. Usually, the key word who asks for a ___.
a) reason
b) time
c) place
d) person

83. The key word why asks for a ___.
a) place
b) thing
c) person
d) reason

84. The key word what asks for a ___.
a) time
b) place
c) thing
d) reason

SESSION I II [✓ III] IV
(Circle Session Number)

Answer Sheet

Name: MASTER

Date: Revised 6/11/90

1. A B C ●
2. A B C ●
3. A ● C D
4. ● B C D
5. ● B C D
6. ● B C D
7. ● B C D
8. A ● C D
9. A B ● D
10. ● B C D
11. ● B C D
12. A B ● D
13. A ● C D
14. A B ● D
15. A B ● D
16. A B ● D
17. ● B C D
18. ● B C D
19. A ● C D
20. ● B C D
21. A ● C D
22. A B ● D
23. A B C ●
24. ● B C D
25. A B ● D
26. ● B C D
27. A ● C D
28. ● B C D
29. ● B C D
30. A B C ●
31. ● B C D
32. A B ● D
33. A ● C D
34. A ● C D
35. ● B C D
36. A B ● D
37. ● B C D
38. A ● C D
39. A ● C D
40. ● B C D
41. A B C ●
42. ● B C D
43. A B C ●
44. A B C ●
45. A B ● D
46. A B ● D
47. A B C ●
48. A B ● D
49. A B ● D
50. A B ● D
51. A B C ●
52. A B C ●
53. A B ● D
54. A B ● D
55. A ● C D
56. A ● C D
57. A B C ●
58. ● B C D
59. A B C ●
60. ● B C D
61. A B ● D
62. A ● C D
63. A B C ●
64. ● B C D
65. A B C ●
66. A B C ●
67. A B ● D
68. A ● C D
69. A B ● D
70. A ● C D
71. A B C ●
72. A B C ●
73. A B C ●
74. A ● C D
75. ● B C D
76. A ● C D
77. A B C ●
78. A ● C D
79. A ● C D
80. A ● C D
81. A ● C D
82. A B C ●
83. A B C ●
84. A B ● D
85. A B C D
86. A B C D
87. A B C D
88. A B C D
89. A B C D
90. A B C D
91. A B C D
92. A B C D
93. A B C D
94. A B C D
95. A B C D
96. A B C D
97. A B C D
98. A B C D
99. A B C D
100. A B C D
101. A B C D
102. A B C D
103. A B C D

Revised 9/27/89
Revised 6/11/90

TEST III REFERENCE

1. 2-1 through 2-11
2. 2-1
3. 2-7
4. Common sense applies
5. 2-12
6. FMCSR
7. Information
8. 5-7
9. 5-4
10. 5-8
11. 2-2
12. 2-42
13. 2-11
14. 2-11
15. 2-39/40
16. 2-41
17. 2-31
18. 2-20
19. 5-8
20. 2-38/39
21. 5-4
22. 5-2
23. 2-13
24. 2-42
25. 2-30
26. 2-2
27. 2-38
28. 5-5
29. 5-8
30. 5-6
31. 3-3
32. 5-9/2-20
33. 2-22
34. 2-16
35. 2-43
36. 2-21
37. 2-12
38. 2-15
39. 5-9
40. 2-21
41. 5-5
42. 6-6
43. 5-3
44. 5-4
45. 5-1
46. 6-6
47. 5-1
48. 5-2
49. 5-5
50. 5-5
51. 5-4
52. 5-4
53. 5-4
54. 5-4
55. 5-1
56. 5-1
57. Test Taking
58. 5-6
59. 5-7
60. 5-6
61. 5-6
62. 5-8
63. 2-23/24
64. 2-29
65. 2-13
66. 2-29/30
67. Federal Law
68. 2-18
69. 2-31
70. 2-20
71. 2-21
72. 2-27
73. 2-27/34
74. 2-15

Instructor's Text

SESSION IV (Blue)
TRANSPORTING, CARGO, COUPLING, UNCOUPLING AND MISCELLANEOUS

This session reviews the rules of safety in regard to transporting passengers. It consists of the following units:

I - Recap -- Review data and specific facts of Session I, II and III.

II - Cargo Inspection -- To recognize basic cargo safety rules and procedures.

III - Weights and Balances -- Knows laws and drivers responsibility for weights and balances of commercial vehicle.

IV - Securing Cargo --
A. Understanding the importance of securing cargo.
B. Methods of securing cargo.

V - Special Cargo --
A. Recognizing the need of special cargo.
B. Recognizing the measures and procedures to be used in avoiding accidents in hauling special cargo.

VI - Combination Vehicles and Uncoupling --
A. Understand the important safety factors that apply specifically to combination vehicles.
B. Understanding the methods and procedures for coupling and uncoupling a combination vehicle safely.

VII - Drugs, Alcohol and Drowziness --
A. Recognizing the values of and procedures for being ready to drive.
B. Understanding the laws on driver's physical requirements for interstate transportation.

VIII - Test Taking Skills -- Help with test taking.

IX - Proficiency Test -- Final step to evaluate text of course.

** One minute at most per question for time allowed!

SESSION IV

1. Recap - (Session I, II and III)
2. Cargo Inspection
3. Weights & Balances
4. Securing Cargo
5. Special Cargo
6. Combination Vehicles:
    Coupling/Uncoupling
    Cargo Inspection
7. Drugs, Alcohol, & Drowsiness
8. Test Taking Skills
9. Proficiency Test
10. Referral:

    A. Upon successful completion of Proficiency Test, student progresses to Commercial Driver's Licensing Examination.

    *B. Unsuccessful completion of Proficiency Test, student progresses to Makeup Session.

    C. Upon successful completion of Makeup Session, student progresses to Commercial Driver's Licensing Examination.

SESSION: IV

SUBJECT: Recap

TIME ALLOTTED: 1 - 1 1/2 hours

PAGE: 4 - 1

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Review all data and specific facts of previous session.	1.A. Session I a. Control Systems b. Basic Control c. Shifting d. Backing e. Speed Management 1.B. Session II a. Visual Search b. Communication c. Space Management d. Night Operation e. Extreme Driving Conditions f. Hazard Perception 1.C. Session III a. Cargo Inspection b. Weights & Balances c. Securing Cargo d. Special Cargo e. Combination Vehicles: Coupling/Uncoupling Cargo Inspection f. Curricula Overview	Lecture-Commercial Driver's Manual Session I - III	1. Asking factual and specific questions.
	2. Curriculum sheets Session IV		2. Proficiency Test.

SESSION IV

RECAP

Objective

Review all data and specific facts of previous sessions.

Topic(s)

Session I
1. Control Systems
2. Basic Control
3. Shifting
4. Backing
5. Speed Management

Session II
1. Visual Search
2. Communication
3. Space Management
4. Night Operation
5. Extreme Driving Conditions
6. Hazard Perception

Session III
1. Pre-Trip/Post-Trip
2. Air Brakes
3. Skid Control and Recovery
4. Emergency Maneuvers
5. Emergency Reporting

Curriculum Sheets - Session IV

Techniques/Procedures and Activities

Lecture:

Commercial Driver's Manual - Session I through IV

Color Code -		
	Session I	Yellow
	Session II	Green
	Session III	Red
	Session IV	Blue

SESSION IV

1. RECAP

Objective

Review data and specific facts of previous session derectly related to CDL Manual and Test.

Topic(s)

1. Laws - (CDLM 1-8, 1-9, 3-2, 3-3)

2. Control Systems

3. Basic Control (CDLM 2-12, Top 2-13)

4. Shifting (CDLM 1-14, 2-15)

5. Backing Management (CDLM 2-20, 2-21, 2-22)

Techniques/Procedures and Activities

Recap - Session I: Text of CDLM, go to jcolor Code Session I. Refer to Color Code, Hightlighted area, Session I (color Code - Yellow)

1. Laws - (1-8, 1-9, 3-2, 3-3)
   A. Seat Belts
   B. 40´Length Law Straight Truck
   C. 96" to 102" Width All Roads
   D. 48´ Box Length
   E. Weight 80,000 5 Axles Maximum
      80,000 Interstate Even With Tri-axle
   Touch on Overhead CDLM, pages 1-8, 1-9
   F. .04 Blood Alcohol Level - Truck Only
   G. One License Only - Commercial

2. Control Systems
   Handout 1.2-37
   1.2-38

3. Basic CVontrol
   A. No Roll Back on Start
   B. Wheel Held at Opposite Position (9-3)
   C. Traction, Release Acceleration

4. Shifting - (2-14, 2-15)
   A. Double Clutch - Clutch all the time.
   B. Curves, Hills, Shift Prior

5. Backing - (2-13, 2-14)
   - A. Safe
   - B. Slowly
   - C. Helper when possible.

6. Speed Management - (2-20, 2-21, 2-22)
   - I. A. 12 - 15 Seconds (1/4 mile)
     - B. Empty greater the loaded stop distance. (2-17)
     - C. 3/4 seconds 55 mph 60' in 3/4 seconds.
     - D. Double speed 4 times destructive power crash.
     - E. 55 mph dry pavement 170' to stop 4 1/2 seconds.
     - F. 55 mph 6 seconds to stop Football fiels (300').
     - G. Smaller Convex mirror, further away. Distortion. (2-17)
     - H. Hi speed major causes fatal crashes.
   - II. A. Condition slippery surfaces 1/3 reduction speed. 1/2 reduction speed in snow, crawl when ice. (2-20, 2-21, 2-22)
     - B. Shaded area.
     - C. Bridges approximately 32° freeze.
     - D. Melting ice.
     - E. Black Ice.
     - F. Vehicle Ice - Back of mirror/support.
     - G. Hydroplanning - 30 mph slow.

SESSION IV

2. RECAP

Objective

Review data and specific fact of Session II.

Topic(s)

Recap Session II

1. Visual Search (Pages 2-16, 2-17 top)_
   - A. 12-15 sec - 1/4 mile
   - B. Scanning area side by side, mirror check
   - C. Road conditions - hills and curves
   - D. Pedestrians, blind spots, check vehicle
   - E. Special situations, lane changes, turns, merges, tight maneuvers
   - F. Lane changes, before, after, right after, after completion
   - G. Turns
   - H. Merges
   - I. Tight maneuvers
   - J. Understanding sight - convex distortion
2. Communication (Pages 2-17, 2-18, 2-19, 2-20)
   - A. Turns, signal, cancel
   - B. Lane changes, signal prior
   - C. Slowing down - under minimum or posted speed limit
     Flashers (4)
   - D. Stopping on road or parked on road
     Warning device - 10 minute maximum place
     Figure 2-8 & Handout Session II
     Figure2-9 & Handout Session II
     Figure 1-10 & handout Session II
     Federal Motor Carrier Safety Regulation #392.22
3. Space Management (Pages 2-23, 2-24)
   - A. Need space ahead/behind - 12-15 sec. rules
     Count 1 sec. every 10 feet under 40 mph
     Add 1 sec. for speeds above 40 mph

- B. Stay to right
- C. Dealing with tailgaters
  - 1. Avoid quick changes
  - 2. Increase your following distance
  - 3. Don't speed up
  - 4. Avoid tricks
- D. Staying centered
- E. Traveling next to others
  - 1. Another driver changes lane
  - 2. Weight in cargo van changes height
  - 3. Vehicle tilt (roads)
  - 4. Backing, check overheads i.e. branches, electrical wires, fire escapes
  - 5. Under vehicle, i.e. railroad tracks, dirt road
- H. Right turns
  - 1. Turn slowly (set up)
    Checks Page 2-25, Figure 2-11, 2-12
- I. Size, slow acceleration, all across

4. Night Operation (Page 2-27)

- A. Pre-Trip
- B. Blinding/High Low Beams
  - 1. Dim 500' oncoming or following
  - 2. Avoid blinding, don't flash back
  - 3. High beam whenever you can
  - 4. Low 250', high 350-500', signal ahead

5. Extreme Driving Condition (Pages 2-29, 2-34)

- a. Tires front 4-32, rear 2-32
- b. Chairs
- c. Lights & reflectors
- d. Windows/mirrors
- e. Exhaust system (black lines, Coupling out of service)
- f. Slippery surfaces
- g. Adjust turning/breaking, speed conditions
- h. Wet brakes
  - 1. Up gear
  - 2. Light pressure
  - 3. Up rpm's while crossing water
  - 4. Test stop when possible

5A. Hot Weather Driving

1 Two hours - every 100 miles check tires
2 Engine oil coolant
3 Radiator cap (never remove under pressure)
4 Belts - v-belts = tighten approximately 1" play
5 Bleeding tar - rain first start, hot tary rises
6 Slow to prevent overheating increase speed creates more heat, heat increases chances of tire failure, fires, or engine failure

5B. Mountain Driving (Page 2-33)

1 Down gear descending
  Down gear uphill
  Be in right gear before downhill
2 Long downhill light steady pressure
  Don't stab brake
3 Excape ramp (pea gravel)

6. Hazard Perception (Pages 2-34, 2-35, 2-36, 2-37)

1 Be prepared
2 Visual search
3 Hazard: (driver, bicyclist, pedestrian)

6A. Road Hazards

1 Work zones
2 Drop off
3 Foreign objects
4 Offramps/Onramps
  1. Large vehicles, heavy vehicles, real touchy
5 Drivers who are hazards
  a Blocked vision - (slow ect.)
  b Turning around
  c Parked vehicles
  d Talking
  e Ice cream truck
  f Confused
  g Slow
  h Hurry
6. Drivers body movement
7. Always plan a way out

SESSION IV

3. RECAP

Objective

Review data and specific facts of Session III.

Topic(s)

1. Pre-Trip/Post-Trip (2-1 thru 2-11)
2. Air Brakes (5-1 thur 5-10, 2-39)
3. Skid Control and Recovery (6-2, 6-3, 6-4, 2-41, 2-42)
4. Emergency Maneuvers (2-38 thur 2-41)
5. Emergency Reporting (2-43, 2-44)

1. Pre-Trip/Post-Trip
   A. Federal and State Requires (Minimum 15 minutes)
   B. During Trip
      1. Gauges
      2. Senses (Look, Listen, Smell)
      3. When to Stop on Critical Items
   C. Post-Trip
      1. Vehicle Condition Report
   D. Tires
      1. 4/32 Steering, 2/32 ?
      2. Mismatched (Radial, Bias)
      3. Cracks/Cuts
      4. Tires Touch

   E. Wheel/Rim
      1. Rust
      2. Missing Clamps, Bent, Cracked
      3. Welded Rims
   F. Bad Brakes/Drums
      1. Cracked, Air Fluid, Thin Worn
   G. Steering
      1. 10 Play (2" in 20" Rim)
   H. Suspension
      1. Spring Hangers - Movement
      2. Cracked/Broken
      3. Missing/Broken Leafs
      4. Leaking Shocks
      5. Air Suspension, Damaged or Leaking
      6. Loose/Cracked/Broken Frame Mem.
   I. Exhaust System
      1. Five black lines, rib joint (out of service)
      2. Loose/Broken/Rubbing Against Fuel System
   J. Emergency Equipment
      1. Fire Extinguisher
      2. Warning Devices, Fuses, Circut

- K. Seven Step (2-4 thru 2-11)
  - A. Vehicles Overview
    - a. Review Last Inspection
  - B. Check Engine Compartment
    - a. Check Wheels
  - Start Engine/Inspect Inside the Cab
  - C. Get in Start Engine
    - 1. Oil Pressure (Real Important)
    - 2. Listen Unusual Noises
    - 3. Check Condition of Controls
    - 4. Turn Off Engine/Check Lights
    - 5. Do Walk Around Inspection
      - A. Front, Down Left Side and Around
    - 6. Lights/Signal ?
    - 7. Start Engine, Test Brakes
      - A. Hydraulic Leaks
        Pump Pedal 3 Times, Apply Firm Pressure With Hand (5 sec.)
      - B. Test Parking Brake (Air) -
        Vehicle Slowly Move
      - C. Service Brake (Air) -
        5 mph Push Brake Firmly Pulling Side Trouble
- L. Safety Inspection
  - A. Truck and Tractor Trailer Must - 25 Miles/150 Miles or three Hours
  - B. Check - Tires Overheat, Braking, Coupling, Etc.

2. Air Brakes (5-1 thru 5-10)
- A. Three parts
  - 1. Service (normal brake apply)
  - 2. Parking (applies/releases parking brake)
  - 3. Emergency (uses parts-service/brake)
- B. Governor - air
  - 1. Cut-out 125 psi
    Cut-in 100 psi
- C. Tank - Air
  - 1. Holds several times more
- D. Tanks
  - 1. Drain daily (rid water and oil)
- E. Safety Valve
  - 1. First tank releases 150 psi
- F. Supply pressure gauges (air tank - dual)
- G. Application pressure gauge (not all vehicles)
- H. 1. Low air pressure warning - required on all air brake vehicles
  - 2. Below 60 psi
  - 3. Wig wag (mechanical arm into view again, 60 psi)
  - 4. Large bus - low pressure 80 - 85 psi (people)
- I. Stop light - (Rear light)
- J. Front Brake Limiting Valve
  - 1. Pre 75 - control - normal/slippery
  - 2. Cut pressure to front by 1/2
  - 3. Limiting valves used reduce front wheel skids
  - 4. Normal position - normal stopping
  - 5. Some vehicles automatically redues air brakes
    Hard 60 psi on up can't be controlled.

K. Spring Brakes - Applies low air 20 - 45 psi
    1. Diamond shape - out is on, in is not
    2. Never use brake when spring brake is on
L. Modulating Control Valve - some vehicles control handle, gradually
    1. Controls spring valve
M. Dual parking control valve - main air pressure is lost - spring brake on - dual air tank used to release, one push-pull, other valve out position
N. Dual air system - 121 - newer system
   Each has own system (primary and secondary)
    1. Dual - min. 100 psi low warning light off 60 psi
O. Inspecting air brake system:
    1. Belt - tight
    2. Manual slack adjuster (1" min) (90°)
       (Snug up, back off 1/2 turn)
        a. 9/16 wrench ads.
        b. brake lining (cracked, thin, grease and oil, loose, etc)
P. Test low warning signal
    1. Enough air shut down engine, pump pedal 60 psi
    2. Spring brake auto. chock wheels release parking up air, shutt pump brake, parking knob pops out (20-40 psi)
    3. Air pressure build-up
        a. dual air - 85 to 100 psi, 45 sec.
        b. single - pre 75, 50-90 - 3 min. (600-900 RPM)
    4. Leakage - 125 psi less rate
        a. low 2 psi - 1 min. - single vehicle
        b. low 3 psi - combo
        c. apply 90 psi on brake
            1. low 3 psi - 1 min. - single
            2. low 4 psi - 1 min. - combo
*   5. Air System
        a. Parking - low gear pull against
        b. Service (5 mph) Hit brake pedal
Q. Using Air Brakes
    1. Emergency stops
        a. Controlled - squeeze without locking wheels up (no pull)
        b. Stab - hard brake till lock up releases again (no pull)
    2. Stopping Distance, Section 2
        a. 55 mph good traction 300′
        b. 3/4 reaction
    3. Upgrades - right lowest gear
                  light, steady pressure brake
    4. Low pressure warning
        a. 60 psi
        b. 20-45 spring brake
        c. heavy load, longer distance, stop
    5. Parking Brakes - always at stop - chocks to use

**** NOTE: WHEN ASKED BRAKE QUESTION IN THE GENERAL TEST, IT ALWAYS REFERS TO HYDRAULIC SYSTEM: WHEN ASKED ABOUT BRAKES IN AIR BRAKE TEST IT ALWAYS REFERS TO AIR BRAKES.**

3. Skid Control and Recovery
    A. Overbraking, don't lock wheels
    B. Oversteering, turn smoothly
    C. Overacceleration, accelerate smoothly
    D. Driving too fast, most accidents caused by speed
        1. stop braking to get trailer back
        2. turn smoothly
        3. countersteer when needed
        4. try to recognize what type of skid your in

4. Emergency Maneuvers
    A. Both hands on the steering wheel
    B. How to turn quickly and safely
        1. do not apply brake
        2. turn smoothly
        3. be prepared to countersteer
    C. Leaving the road
    D. Avoid braking
    E. Keep wheels on pavement if possible
    F. Returning to the road
    G. Braking
    H. Recognize tire failure

5. Emergency Reporting
    A. Protect the area and scene, triangle placement
    B. Notify authorities and call police, ambulance, your company
    C. Care for injured, don't be a doctor

SESSION: IV

SUBJECT: Cargo Inspection

TIME ALLOTTED: 20 Min.

PAGE: 4 - 2

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. To recognize basic cargo safety rules and procedures.	1. When to inspect A. Pre-trip B. In route C. First 25 miles D. Three hours and/or 150 miles E. The drivers responsibility for cargo loading and securing	1. Lecture - Commercial Driver's Manual A.-E. - 3-1 1. Overhead Transparencies E. - 5.1-35 A.-D. - 5.1-36 (Federal Regulations)	1. Asking factual and specific questions.
			2. Proficiency Test.

SESSION IV

CARGO INSPECTION

Objective

To recognize basic cargo safety rules and procedures.

Topic(s)

When to inspect.
    Pre-trip.
    In route.
    first 25 miles.
    Three hours and/or 150 miles.
    The drivers responsibility for cargo loading and securing.

Techniques/Procedures and Activities

Overhead Transparencies
    5.1-35
    5.1-36 (Federal Regulations)
    NH Law Spilliage

Lecture: CDLM 3-1

As part of your pre-trip inspection, check for overloads, poorly balanced weight, and cargo that is not secured right.

Inspect the cargo and its securing devices again within 25 miles after beginning a trip. Make any adjustments needed. Check the cargo and securing devices as often as necessary during a trip to keep the load secure. Inspect again:

-- After you have driven for 3 hours of 150 miles.
-- After every break you take during driving.

Federal, state and local regulations of weight, securement, cover, and truck routes vary greatly from place to place. Know the regulations where you will be driving.

SESSION IV

NH LAW SPILLAGE

266:72 SPILLAGE OF MATERIAL

I. No vehicle shall be driven or moved on any way unless such vehicle is so constructed or loaded as to prevent any of its load from dropping, sifting, leaking or otherwise escaping from there, except that sand may be dropped for the purpose of securing traction, or water or other substance may be sprinkled on a way in cleaning or maintaining such a way.

II. No person shall operate on any way any vehicle with any load unless said load and any covering thereon is securely fastened so as to prevent said covering or load from becoming loose, detached or in any manner a hazard to other users of the way. Without limiting the foregoing provision, no person shall drive on any way any open vehicle loaded with earth, sand, asphalt, stone, gravel or other particulate substance unless said vehicle is equipped with and said load is covered and secured by a close-fitting tarpaulin which prevents the escape of any substance from said load onto the way.

III. Any person who violates the provisions of this section shall be guilty of a violation if a natural person, is guilty of a misdemeanor if any other person. Any person shall ve liable to the state or town for any damage done to the way by spillage.

IV. The provisions of paragraphs I, II and III of this section shall not apply to a local farmer tranporting his own farm products or materials incidental to his farming operation where such transporting requires incidental use of a way provided that such farmer shall not thereby be relieved of his duty to exercise reasonable care in carrying on such operations.

V. The provisions of paragraph II shall not apply to:

(a) The operation of highway building equipment as defined in RSA 259.42 and motor vehicles used in the construction of highways provided that such equipment or motor vehicle is used within a highway construction zone as prescribed by the commissioner, public works and highways, provided that the driver of any such vehicle shall not thereby relieved of his duty to exercise reasonable care;

(b) The operation of municipal and state highway maintenance equipment;

(c) The driving of any vehicle on a way at speeds of less than 30 miles per hours.

Visual 1

Cargo Handling

Consequences of Improper Cargo Handling

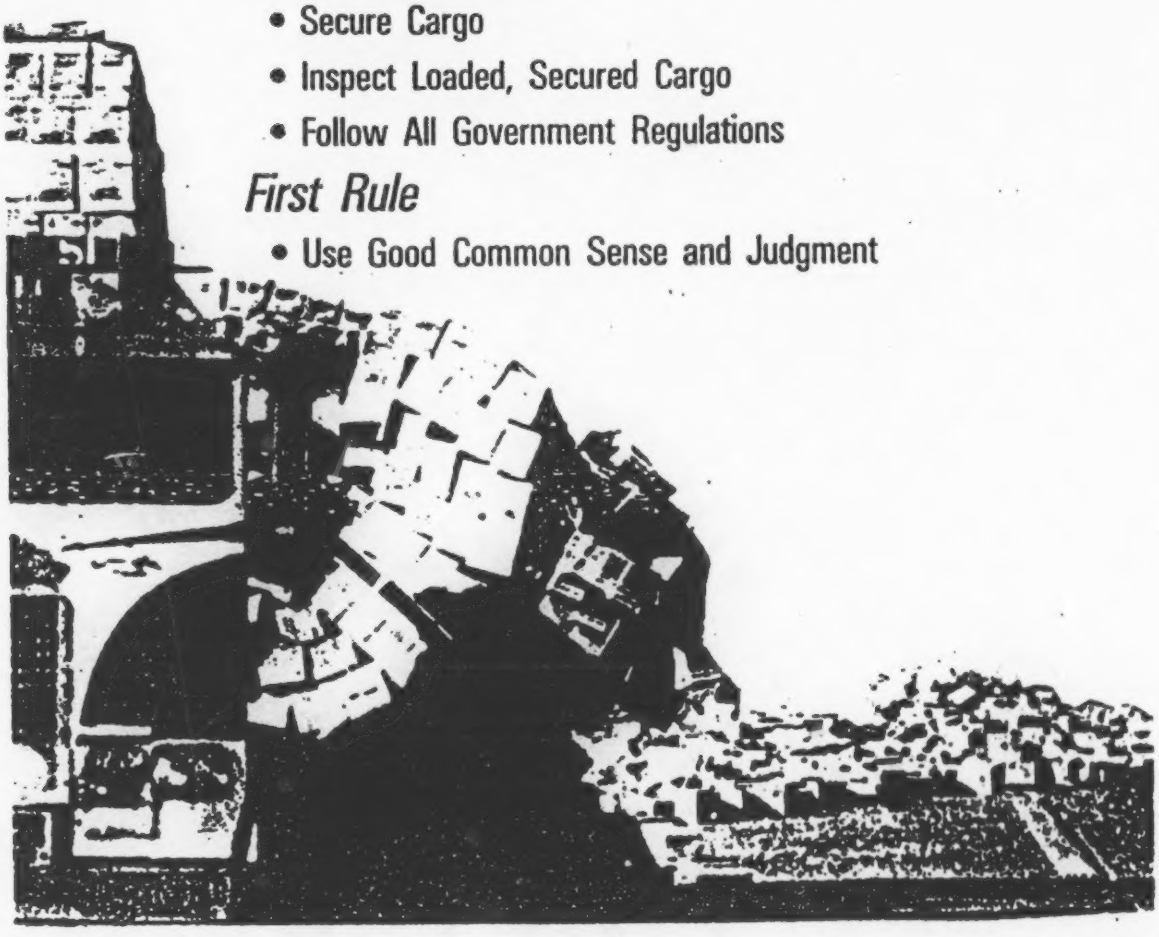
- Accident/Injuries to Self and Others
- Lost/Damaged Cargo
- Difficult Vehicle Handling
- Vehicle Damage

Driver's Responsibilities

- Load/Unload Cargo
- Secure Cargo
- Inspect Loaded, Secured Cargo
- Follow All Government Regulations

First Rule

- Use Good Common Sense and Judgment



4-1

Federal and State Regulations About Cargo Weight and Securement

FMCSR 392.9

- Cargo Securement
  - Cargo Must Be Secured
  - Examples in FMCSR 393.100 - 106
  - Cannot Block View or Exit
- Inspection
  - Examine Cargo in First 25 Miles
  - Reinspect Cargo and Securement—If Driver Changes His Duty Status or
    - Drives 3 Hours or
    - Drives 150 Miles

State Regulations—Two Types

- Vehicle and Cargo Weight
  - Know and Comply With Limitations
- Cargo Securement and Cover
  - Know and Comply With Requirements

4-2 H

SESSION: IV

SUBJECT: Weights and Balances

TIME ALLOTTED: 20 Min.

PAGE: 4 - 3

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Knows laws and drivers responsibility for weights and balances of commercial vehicle.	1. Definitions A. Gross vehicle weight B. Gross combination weight C. Gross vehicle weight rating D. Gross combination weight rating E. Axle weights F. Tire load G. Suspension systems H. Coupling device capacity I. Legal weight limits and sizes J. Top heavy K. Balancing the weight	1. Lecture - Commercial Driver's Manual A.-K. - 3-2, 3-3, 3-4 1. Overhead Transparencies 1.A.-I. - 5.1-37 1.E. - 5.1-38	1. Asking factual and specific questions. 2. Proficiency Test.

SESSION IV

WEIGHTS AND BALANCES

Objective

Knows laws and drivers responsibility for weights and balances of commercial vehicle.

Topic(s)

Definitions
- Gross vehicle weight.
- Gross combination weight.
- Gross vehicle weight rating.
- Gross combination weight rating.
- Axle weights.
- Tire load.
- Suspension systems.
- Coupling device capacity.
- Legal weight limits and sizes.
- Top heavy.
- Balancing the weight.

Techniques/Procedures and Activities

Overhead Transparencies
- 5.1-37
- 5.1-38

Handouts

Lecture: CDLM 3-2, 3-5

You are responsible for not being overloaded. Here are some definitions of weight you should know:

Gross vehicle weight (GVW). The total weight of a single vehicle plus its load.

Gross combination weight (GCW). The total weight of a powered unit plus trailer(s) plus the cargo.

Gross Vehicle Weight Rating (GVWR). The maximum GVW specified by the manufacturer for a single vehicle plus its load.

Gross Combination Weight Rating (GCWR). The maximum GCW specified combination of vehicles plus its load.

Axle Weight. The weight transmitted to the ground by one axle or one set of axles.

Tire load. The maximum safe weight a tire can carry at a specified pressure. This rating is stated on the side of each tire.

Suspension systems. Suspension systems have a manufacturer's weight capacity rating.

Coupling device capacity. Coupling devices are rated for the maximum weight they can pull and/or carry.

You must keep weights within legal limits. No combination of vehicles (tractor/trailer unit) may be operated in New Hampshire if the combination weight of the vehicle and load is greater than 80,000 pounds. However, a weight of 80,000 pounds is only legal if the combination measures **51 feet between extreme axles.** Lower weights are required according to a bridge formula for shorter axle distances of **fewer than 5 axles.** The fact that you register your vehicle for a particular weight does not entitle you to carry that weight if it exceeds the road limit - it is your responsibility to know what you can legally carry and not to register for more than that weight.

-- The **maximum weight for two axle vehicles is 33,400 pounds.** Three axle vehicles cannot exceed **55,000 pounds,** or "the bridge formula" on the interstate and defense highway system. **Four axle vehicles with drive on two rear axles** and a retractable rear axle cannot exceed **60,000 pounds,** or the **"bridge formula"** on interstate or defense system.
-- You are obliged to submit to weighing on request of a law officer, who can require you to drive up to 10 miles to the nearest set of scales.
-- Maximum width of any vehicle - **96 inches, or 102 inches** on roads with 12 foot lanes, or for a bus.
-- The maximum height of any vehicle, including load, is 13 feet 6 inches.
-- The maximum length of a single unit vehicle including load is 40 feet. The maximum length for single trailers is 48 feet, and for double trailers, 28 feet per trailer.
-- Vehicles used for the winter maintenance of public highways which are owned, leased, or rented by the State or any political subdivision of the state are exempt from the weight, length, and width requirements listed above.
-- Whenever the load of a vehicle extends four (4) or more feet beyond the rear of the bed or body of the vehicle, the driver shall display a red flag or cloth which is at least 12 inches square at the extreme end of the load. At night or other times when lights are required, a red light which is visible for at least 500 feet to the sides and rear must be at the extreme end of the load.
-- Double trailers are only permitted on four-lane turnpikes and toll roads and other access routes approved by the Commissioner of the Department of Transportation.

-- Persons who wish to move a vehicle and load which has a weight, width, height, or length greater than those allowed by law may apply to the Department of Transportation for a permit to move this vehicle and load upon a specified highway at a specified time.

It is illegal to operate any triple trailer on New Hampshire's public roads. However, if you so desire, you may take the CDL "double/triple" endorsement test which will allow you to operate these vehicles in those states which allow them. See Section 6 of this manual for information needed to pass the "double/triples" endorsement test.

Overloading can have bad effects on steering, braking, and speed control. Overloaded trucks have to go very slow on upgrades. Worse, they may gain too much speed on downgrades. Stopping distance increases. Brakes can fail when forced to work too hard.

During bad weather or in mountains, it may not be safe to operate at legal maximum weights. Take this into account before driving.

The height of the vehicle's center of gravity is very important for safe handling. A high center of gravity (cargo piled up high, or heavy cargo on top) means you are more likely to tip over. It is most dangerous in curves or if you have to swerve to avoid a hazard. it is important to distribute the cargo so it is as low as possible. Put the heaviest parts of the cargo under the lightest parts.

Poor weight balance can make vehicle handling unsafe. Too much weight on the steering axle can cause hard steering. It can damage the steering axle and tires. Underloaded front axles (caused by shifting weight too far to the rear) can make the steering axle weight too light to steer safely. Too little weight on the driving axles can cause poor traction. The drive wheels may spin easily. During bad weather, the truck may not be able to keep going. Weight that is loaded so there is a high center of gravity causes greater chance of rollover. On flat bed vehicles, there is also a greater chance that the load will shift to the other side or fall off. Figure 3-1 shows examples of the right and wrong way to balance cargo weight.

Vehicle Weight Definitions and Principles

Basic Principles

Do Not Overload Vehicle

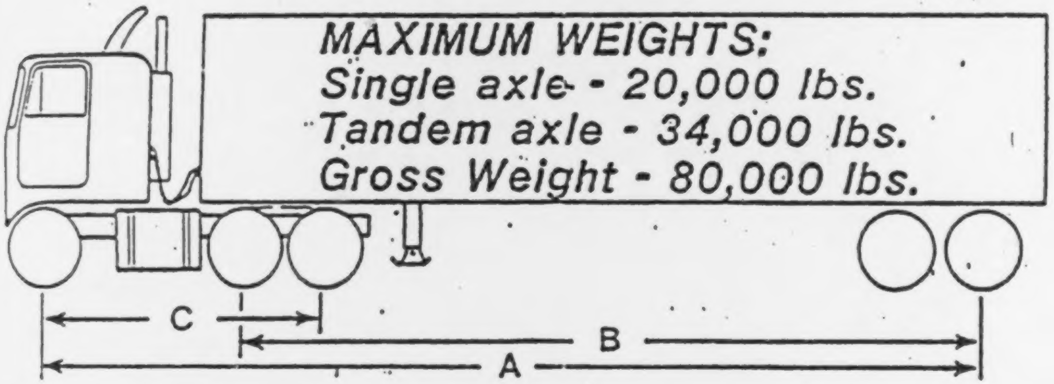
Distribute Weight on Vehicle Properly

Factors

- Vehicle Capacity
  - Manufacturer Rating
  - GVW = Allowable Weight of Straight Truck and Load
  - GCWR = Allowable Weight of Tractor-Trailer and Load
- Components Capacity
  - Axle Weight = Amount of Weight Transmitted to Ground by One Axle
  - Tires, Loads, Fifth Wheel and Suspensions Also Rated
- Legal Capacity
  - Legal Capacity Per Vehicle and Axle Load
  - Bridge Weight Formula-Axle Weight Limits Changed Per Distance Between Axle Centers
- Trip Conditions
  - Lighter Loads When Weather Is Bad or for Mountainous Driving

4-3 H

FEDERAL BRIDGE LAW WEIGHT FORMULA


MAXIMUM WEIGHTS:
Single axle - 20,000 lbs.
Tandem axle - 34,000 lbs.
Gross Weight - 80,000 lbs.

A (5 AXLES)		B (4 AXLES)		C (3 AXLES)	
DISTANCE IN FEET	WEIGHT IN POUNDS	DISTANCE IN FEET	WEIGHT IN POUNDS	DISTANCE IN FEET	WEIGHT IN POUNDS
38	72,000	31	62,500	10	43,500
39	72,500	32	63,500	11	44,500
40	73,000	33	64,000	12	45,000
41	73,500	34	64,500	13	46,000
42	74,000	35	65,500	14	46,500*
43	75,000	36 and over	66,000	15	47,500*
44	75,500			16	48,000*
45	76,000				
46	76,500				
47	77,500				
48	78,000				
49	78,500				
50	79,000				
51	80,000				

*NOTE: Most states have set a maximum weight limit on the steering axle at 12,000 pounds excluding this axle from the single axle limit of 20,000 pounds. If this is the case the maximum weight for measurement C is 46,000 pounds. (12,000 pounds on the steering plus 34,000 pounds on the tandems)

MEASUREMENT "A"

The basic measurement to determine maximum gross weight allowed is the distance between the steering axle and the last axle on the trailer as well as the number of axles.

MEASUREMENT "B"

The Federal Bridge Formula also is used to determine maximum axle weights within the combination. The primary measurement is the distance between the first drive axle and the last trailer axle. This measurement is especially important in that it allows an exception to the Federal Bridge Law. If this measurement is 36 feet or more each set of tandem axles is allowed to carry 34,000 pounds.

MEASUREMENT "C"

This measurement is used to insure compliance with all axles in the combination under the Federal Bridge Law. This measurement is the distance between the steering axle and the last drive axle.

NOTE Drivers should keep this in their trucks!!

Visual

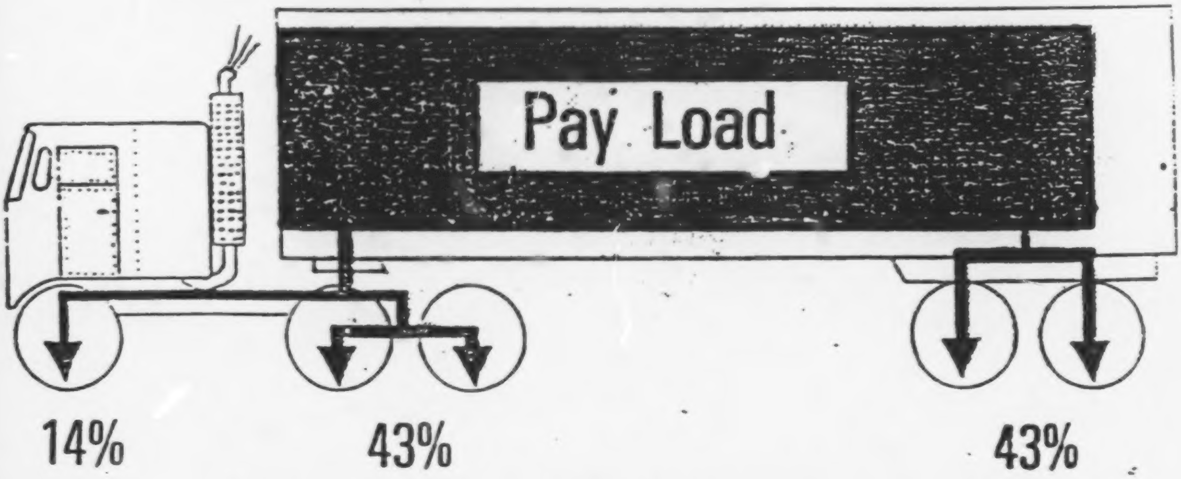
Weight Distribution on Tractor and Trailer

Tractor

- Distribute Weight Properly Over Axles
- Weight Distribution Depends on Position of Fifth Wheel
  - Single Axle—Slightly Forward of Centerline
  - Tandem Axle
    - Stationary—Just Ahead of Centerline
    - Sliding—Last Notch of Slider Adjustment
- Fifth Wheel Moved Forward
  - MORE of LOAD Shifted to Front Axle

Trailer

- Divide Load Evenly Between Front and Rear
- Adjust Load to Meet Axle Weight Limitations
- Keep Center of Gravity Low
  - Heavy Freight on Bottom
  - Properly Distributed



Example of a Well Balanced Load

SESSION: IV
SUBJECT: Securing Cargo
TIME ALLOTTED: 10 Min.
PAGE: 4 - 4

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Understanding the importance of securing cargo.	1. Reasons for securing cargo A. Protecting yourself B. Protecting others C. Protects cargo	1. Lecture - Commercial Driver's Manual A.-E. - 3-5, 3-6 1. Handouts	1. Asking factual and specific questions.
2. Methods of securing	2. Lecture - Commercial cargo A. Blocking B. Bracing C. Cargo tiedown D. Header boards E. Covering	2. Proficiency Test. Driver's Manual A.-E. - 3-5 2. Overhead Transparencies A.&B. - 5.1-45 2.E. - 5.1-61	

SESSION IV

SECURING CARGO

Objective I

Understanding the importance of securing cargo.

Topic(s)

Reasons for securing cargo:
Protecting yourself.
Protecting others.
Protecting cargo.

Techniques/Procedures and Activities

Overhead Transparencies
  5.1-45
  5.1-61

Lecture: CDLM 3-5 to 3-7

Blocking is used in the front, back, and/or sides of a piece of cargo to keep it from sliding. Blocking is shaped to fit snugly against cargo. It is secured to the cargo deck to prevent cargo movement. **Bracing** is also used to prevent movement of cargo. Bracing goes from the upper part of the cargo to the floor and/or walls of the cargo compartment.

On flatbed trailers or trailers without sides, cargo must be secured to keep it from shifting and falling off. In closed vans, tiedowns can also be important to prevent cargo shifting that may affect the handling of the vehicle. For vehicles transporting a load of logs, lumber, or timber where the load is greater than 8 feet in both height and length, the load must be bound by three (w) chains, wire ropes, steel cables, steel straps, or nylon webbing. These binding devices must have a working load limit of at least 2,750 pounds. Vehicles carrying wood products other than logs or long lumber must have the last tier and/or row bound by one of the above devices together with a binder to secure the load.

Vehicles carrying baled hay shall fasten the load securely with at least 2 longitudinal and 4 cross binders. The binders must be knot and rot-free manila rope of at least 3/4 inch diameter.

Vehicles used to transport junk vehicles shall have the load bound by 3 chains and binders. the chains must be made of wire at least 3/8 inch in diameter.

Vehicles transporting construction equipment shall securely fasten each unit of equipment with at least 2 chains and binders made of at least 3/8 inch wire or at least 2 steel cables and binders, or at least 2 turnbuckles of the same length as chains, binders, or cables.

Front end header boards ("headache racks") protect you from your cargo in case of a collision. Make sure the front end structure is in good condition. The front end structure should block the forward movement of any cargo you carry.

There are two basic reasons for covering cargo, (1) to protect people from spilled cargo, and (2) to protect the cargo from weather. A loaded truck carrying loose material such as sand, gravel, asphalt, etc.; must have a close fitting tarpaulin securely fastened to prevent the escape of loose material onto the highway. However, this law does not apply to vehicles operated within a highway construction zone, to town and state highway maintenance equipment, or to any vehicle moving at speeds of less than 30 miles per hour.

You should look at your cargo covers in the mirrors from time to time while driving. A flapping cover can tear loose, uncovering the cargo, and possibly blocking your view of someone else´s.

You cannot inspect sealed loads, but you should check that you don´t exceed gross weight and axle weight limits.

Containerized loads generally are used when freight is carried part way by rail or ship. Delivery by truck occurs at the beginning and/or end of the journey. Some containers have their own tiedown devices or locks that attach directly to a special frame. Others have to be loaded onto flat bed trailers. They are secured with tiedowns just like any other large cargo.

Objective II

Methods of securing.

Topic(s)

Lecture - Commercial cargo.
  1. Blocking
  2. Bracing
  3. Cargo tiedown
  4. Header boards
  5. Covering

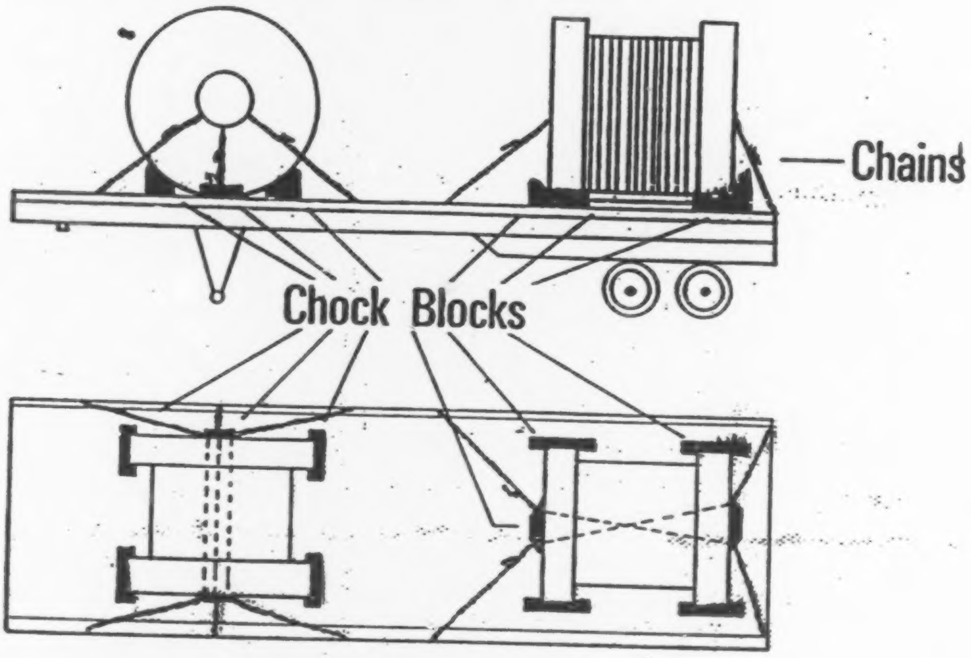
Techniques/Procedures and Activities

REFER TO OBJECTIVE I AND FOLLOW THE SAME PROCEDURES

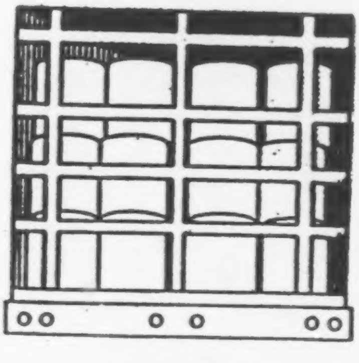
Visual 11

Examples of Blocking and Bracing Cargo

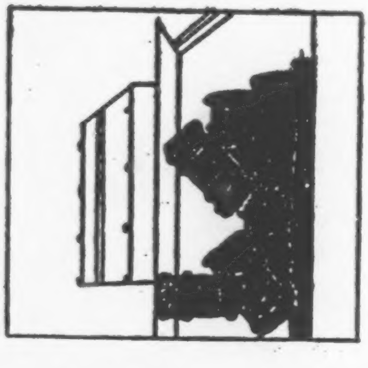
Coil Steel or Cable


Chains
Chock Blocks

Material Blocked and Braced in a Van Trailer



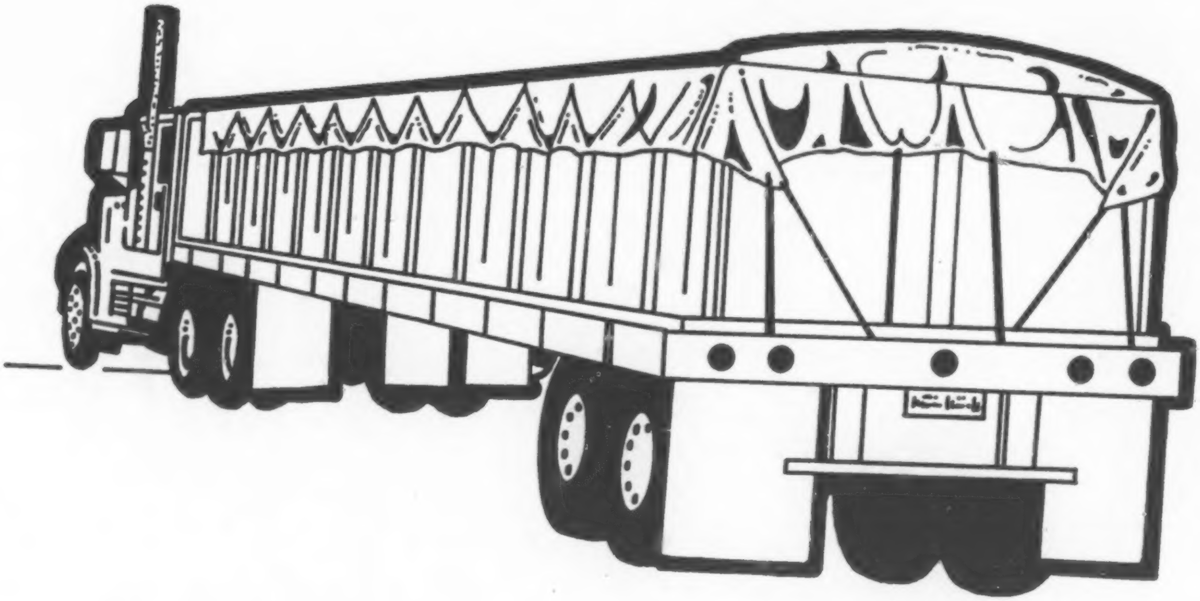
"Right"



"Wrong"

Visual 27

Covering Cargo



Spill Protection

- To Protect Public
- Meet State Law Requirements

Cargo Protection

- To Prevent Corrosion or Other Weather Damage
- Company Can Be Liable for Ruined Cargo
- Use Tarp When Needed
- Make Sure Tarp Doesn't Leak
- Make Sure Tied Properly So It Won't Tear or Leak

SESSION: IV

SUBJECT: Special Cargo

TIME ALLOTTED: 10 Min.

PAGE: 4 - 5

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizing the need of special cargo.	1.A. High center of gravity B. Unstable loads C. Livestocks D. Oversized loads	1. Lecture - Commercial Driver's Manual A.-D. - 3-6, 3-7 Overhead Transparencies 1.A. 5.1-66 Handouts	1. Asking factual and specific questions.
2. Recognizing the measures and procedures to be used in avoiding accidents in hauling special cargo.	2.A. Slow and careful turning a. Curves b. On and off ramps 2.B. Use of false bulkheads 2.C. Use of special equipment a. Wide loads signs b. Flashing lights c. A pilot vehicle	2. Lecture - Commercial Driver's Manual A.-C. - 3-5, 3-7 Overhead Transparencies 2.A. 5.1-69	2. Proficiency Test.

SESSION IV

SPECIAL CARGO

Objective

Recognizing the need of special cargo.

Topic(s)

High center of gravity.
    Unstable loads.
    Livestocks.
    Oversized loads.

Techniques/Procedures and Activities

Overhead Transparencies
    5.1-66

Handouts

Lecture: CDLM 3-7

A "tank vehicle" is a vehicle used to transport any liquid or liquefied gaseous material in a permanently attached tank, or a portable tank having a capacity of 1000 gallons or more. Hauling liquids in tanks requires special skills because of high enter of gravity and liquid movement.

High center of gravity means that much of the load's weight is carried high up off the road. This makes the vehicle top-heavy and easy to roll over. Liquid tankers are especially easy to roll over. Test have shown that **tankers can turn over at the speed limits posted for curves. Take highway curves or on ramp/off ramp curves well below the posted speeds.**

Liquid surge results from movement of the liquid in partially filled tanks. This movement can have bad effects on handling. For example, when coming to a stop, the liquid will surge back and forth. When the wave hits the end of the tank, it tends to push the truck in the direction the wave is moving. if the truck is on a slippery surface such as ice, the wave can shove a stopped truck out into an intersection. the driver of a liquid tanker must be very familiar with the handling of the vehicle.

Some liquid tanks are divided into several smaller tanks by bulkheads. When loading and unloading the smaller tanks, the driver must pay attention to weight distribution. Don't put too much weight on the front or rear of the vehicle.

Baffled liquid tanks have bulkheads in them with holes that let the liquid flow through. The baffles help to control the forward and backward liquid surge. However, side to side surge can still occur which can cause a roll over. Be extremely cautious (slow and careful) in taking curves or making sharp turns with a partially or fully loaded liquid tanker.

Unbaffled liquid tankers (sometimes called "smooth bore" tanks) have nothing inside to slow down the flow of the liquid. Therefore, forward-and-back surge is very strong. Unbaffled tanks are usually those that transport food products (milk, for example). (Sanitation regulations forbid the use of baffles because of the difficulty in cleaning the inside of the tank.) Be extremely cautious (slow and careful) in driving smooth bore tanks, especially when starring and stopping.

Outage. Never load a cargo tank totally full. Liquids expand as they warm and you must leave room for the expanding liquid. This is called outage. Since different liquids expand by different amounts, they require different amounts of outage. You must know the outage requirement when hauling liquids in bulk.

A full tank of dense liquid (such as some acids) may exceed legal weight limits. For that reason you may often only partially fill tanks with heavy liquids. The amount of liquid to load into a tank depends on:
--the amount the liquid will expand in transit, and
--the weight of the liquid, and
--legal weight limits.

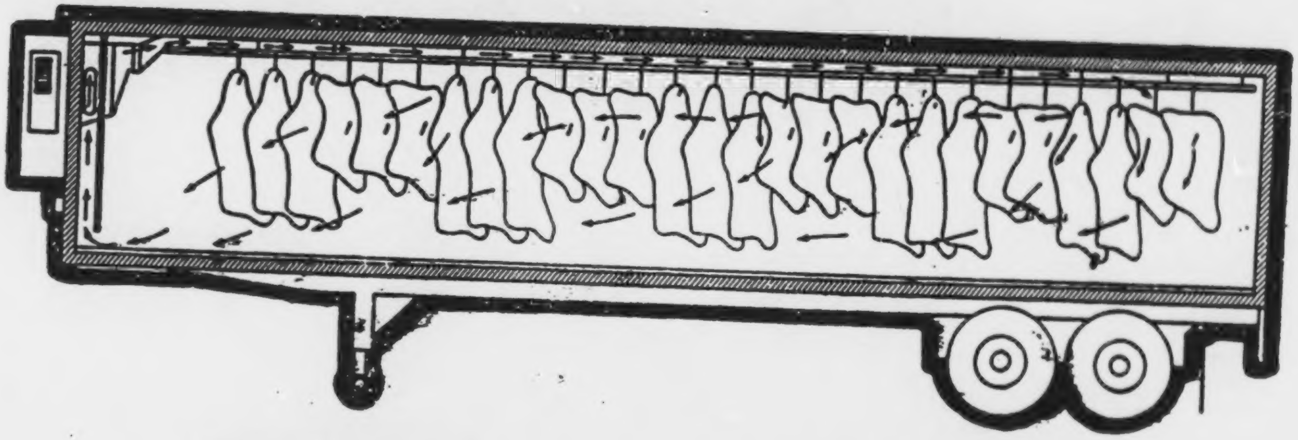
Dry bulk tanks require special care because they often have a high center of gravity, and the load can shift. Be extremely cautious (slow and careful) going around curves and making sharp turns.

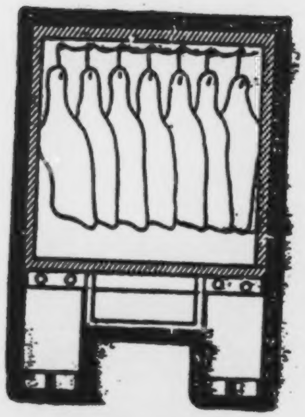
Hanging meat (suspended beef, pork, lamb) in a refrigerated truck can be a very unstable load with a high center of gravity. Particular caution is needed on sharp curves such as off ramps and on ramps. Go slow.

Livestock can move around in a trailer, causing unsafe handling. With less than a full load, use false bulkheads to keep livestock bunched together. Even when bunched, special care is necessary because livestock can lean on curves. This shifts the center of gravity and makes rollover more likely.

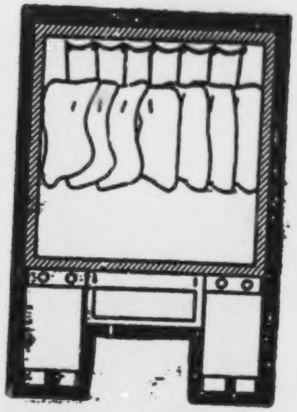
Over length, over width, and/or over weight loads require special transit permits. Driving is usually limited to certain times. Special equipment may be necessary such as "wide load" signs, flashing lights, flags, etc. Such loads may require a police escort or pilot vehicles baring warning signs and/or flashing lights. These special loads require special driving care.

Swinging Meat Loads





End View
Hindquarters



End View
Forequarters

5.1-66

Visual 32

SESSION IV

SPECIAL CARGO

Objective

Recognizing the measures and procedures to be used in avoiding accidents in hauling special cargo.

Topic(s)

Slow and careful turning:
  Curves.
  On and off ramps.

Use of false bulkheads.

Use of special equipment:
  Wide loads signs.
  Flashing lights.
  A pilot vehicle.

Techniques/Procedures and Activities

Overhead Transparencies
  5.1-69

Lecture:

Blocking is used in the front, back, and/or sides of a piece of cargo to keep it from sliding. Blocking is shaped to fit snugly against cargo. It is secured to the cargo deck to prevent cargo movement. **Bracing** is also used to prevent movement of cargo. Bracing goes from the upper part of the cargo to the floor and/or walls of the cargo compartment.

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You should look at your cargo covers in the mirrors from time to time while driving. A flapping cover can tear loose, uncovering the cargo, and possibly blocking your view of someone else's.

You cannot inspect sealed loads, but you should check that you don't exceed gross weight and axle weight limits.

Containerized loads generally are used when freight is carried part way by rail or ship. Delivery by truck occurs at the beginning and/or end of the journey. Some containers have their own tiedown devices or locks that attach directly to a special frame. Others have to be loaded onto flat bed trailers. They are secured with tiedowns just like any other large cargo.

Dry bulk tanks require special care because they often have a high center of gravity, and the load can shift. Be extremely cautious (slow and careful) going around curves and making sharp turns.

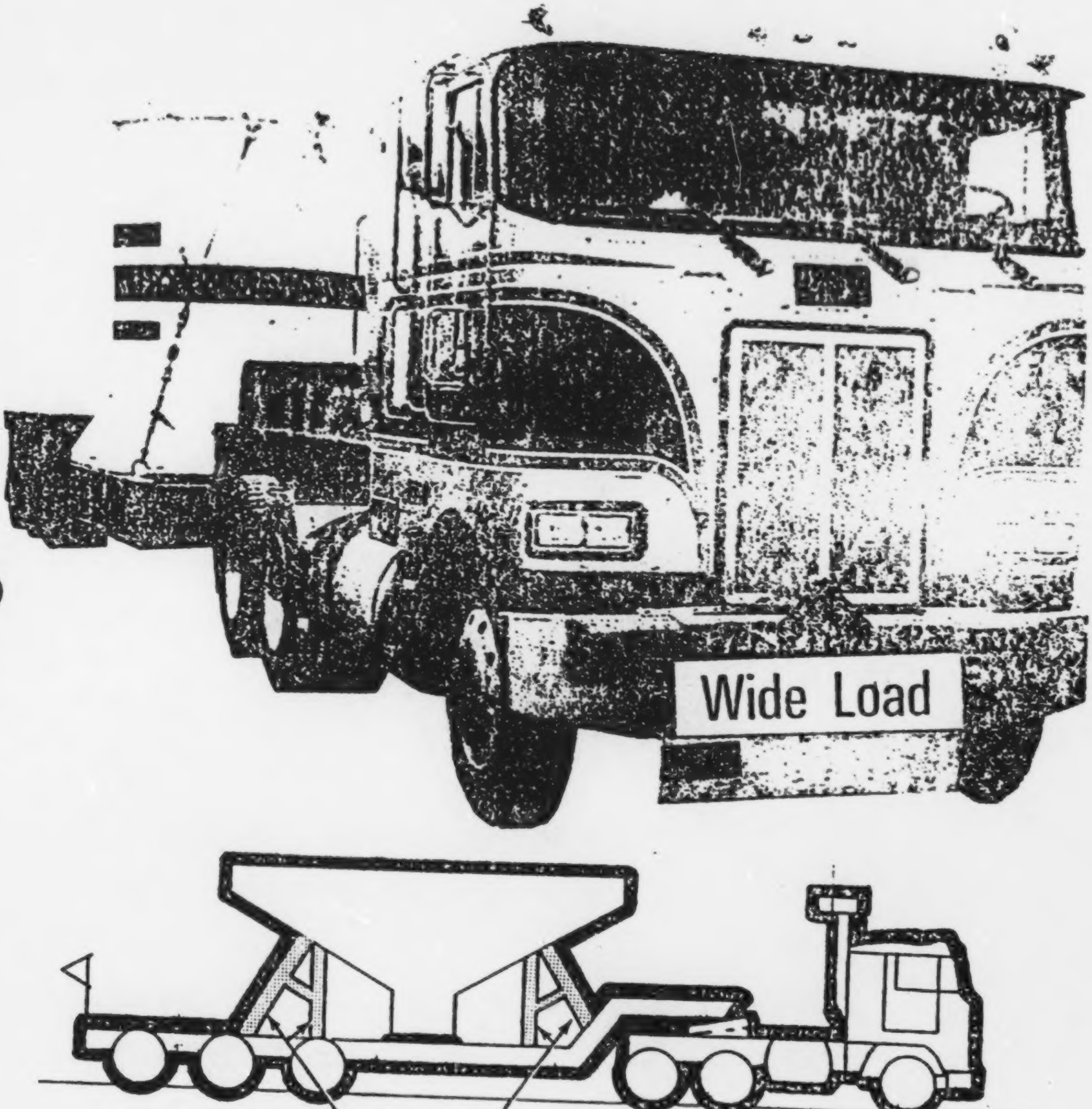
Hanging meat (suspended beef, pork, lamb) in a refrigerated truck can be a very unstable load with a high center of gravity. Particular caution is needed on sharp curves such as off ramps and on ramps. Go slow.

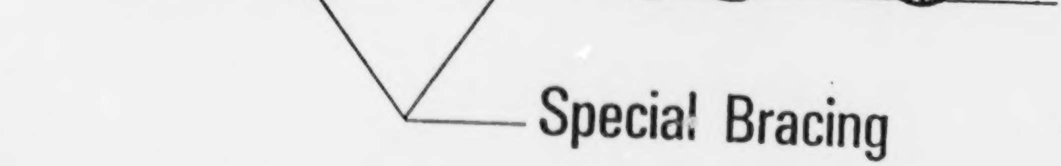
Livestock can move around in a trailer, causing unsafe handling. With less than a full load, use false bulkheads to keep livestock bunched together. Even when bunched, special care is necessary because livestock can lean on curves. This shifts the center of gravity and makes rollover more likely.

Over length, over width, and/or over weight loads require special transit permits. Driving is usually limited to certain times. Special equipment may be necessary such as "wide load" signs, flashing lights, flags, etc. Such loads may require a police escort or pilot vehicles bearing warning signs and/or flashing lights. These special loads require special driving care.

Visual 35

Top Heavy/Odd Shaped Loads




Special Bracing

23✓

4-2

SSION: IV

SUBJECT: Combination Vehicles and Uncoupling

TIME ALLOTTED: 25 Min.

PAGE: 4 - 6

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Understand the important safety factors that apply specifically to combination vehicles.	1. Rollover risks A. Avoiding quick lane changes B. Rearward amplification C. Early braking D. Offtracking E. Trailer and hand valve F. Tractor protection valve G. Trailer brakes a. Service b. Parking c. Emergency d. Chock blocks H. Procedures for coupling and uncoupling a combination vehicle.	1. Lecture - Commercial Driver's Manual 6-1, 6-2, 6-3, 6-4 Overhead Transparencies 1.G. 4.1-327	1. Asking factual and specific questions.
2. Understanding the methods and procedures for coupling and uncoupling a combination vehicle safely.		2. Lecture - Commercial Driver's Manual 6-8, 6-9, 6-10, 6-11, 6-12 Overhead Transparencies 1.7-17, 1.7-19, 1.7-20, 1.7-21, 1.7-22, 1.7-23, 1.7-26, 1.7-27 Handouts	2. Proficiency Test.

SESSION IV

1 COMBINATION VEHICLES AND UNCOUPLING

Objective

Understand the important safety factors that apply specifically to combination vehicles.

Topic(s)

Rollover risks:
1. Avoiding quick lane changes.
2. Rearward amplification.
3. Early braking.
4. Offtracking.
5. Trailer and hand valve.
6. Tractor protection valve.
7. Trailer brakes:
    - Service
    - Parking
    - Emergency
    - Chock blocks
8. Procedures for coupling and uncoupling a combination vehicle.

Techniques/Procedures and Activities

Overhead Transparencies
    4.1-327-Air Brakes System

Lecture: CDLM 6-1 to 6-8

Combination vehicles are usually heavier, longer, and require more driving skill than single commercial vehicles. This means that drivers of combination vehicles need more knowledge and skill than drivers of single vehicles. I this section, we talk about some important safety factors that apply specifically to combination vehicles.

More than half of truck driver deaths in crashes are from truck roll-overs. When more cargo is piled up in a truck, the "center of gravity" moves higher up from the road. The truck becomes easier to turn over. Fully loaded rigs are 10 times more likely to roll over in a crash than empty rigs.

Do the following two things to help prevent rollover: keep the cargo as close to the ground as possible, and go slow around turns. Keeping cargo low is even more important in combination vehicles than in straight trucks. Also, keep the load centered on your rig. if the load is to one side so it makes a trailer

The procedure for stopping a trailer skid is as follows:

Recognize the skid. The earliest and best way to recognize that the trailer has started to skid is by seeing it in your mirrors. Any time you apply the brakes hard, check the mirrors to make sure the trailer is staying where it should be. Once the trailer swings out of your lane, it's very difficult to prevent a jackknife.

Stop using the brake. Release the brakes to get traction back. Do **not** use the trailer hand brake (if you have one) to "straighten out the rig". This is the wrong thing to do since it is the brakes on the trailer wheels that caused the skid in the first place. Once the trailer wheels grip the road again, the trailer will start to follow the tractor and straighten out.

When a vehicle goes around a corner, the rear wheels follow a different path than the front wheels. This is called **offtracking** or "cheating". Figure 6-4 shows how offtracking causes the path followed by a tractor-semi to be wider than the rig itself. Longer vehicles will offtrack more. The rear wheels of the powered unit (truck or tractor) will offtrack some, and the rear wheels of the trailer will offtrack even more. If there is more than one trailer, the rear wheels of the last trailer will offtrack the most. Steer the front end wide enough around a corner so the rear end does not run over the curb, pedestrians, other vehicles, etc. However, keep the rear of your vehicle close to the curb. This will stop other drives from passing you on the right. If you cannot complete your turn without entering another traffic lane, turn wide as you **complete the turn** (Figure 6-5). This is better than swinging wide to the left before starting the turn because it will keep other drivers from passing you on the right. If drivers pass on the right, you might crash into them when you turn. (Session III go over directional) lean, a rollover is more likely. Make sure your cargo is centered and spread out as much as possible. (See Section 3 of this manual.)

Roll-Overs happen when you turn too fast. Go slow around corners, onramps, and offramps. Avoid quick lane changes, especially when fully loaded.

Trucks with trailers have a dangerous "crack-the-ship" effect. When you make a quick lane change, the crack-the-whip effect can turn the trailer over. There are many accidents where only the trailer has overturned.

"Rearward amplification" causes the crack-the-ship effect. Figure 6-1 shows eight types of combination vehicles and the rearward amplification each has in a quick lane change. Rigs with the least crack-the-ship effect are shown at the top and those with the most at the bottom. Rearward amplification of 2.0 in the chart means that the rear trailer is twice as likely to turn over as the tractor. You can see that triples have a rearward amplification of 3.5. This means you can roll the last trailer of triples 3.5 times as easily as a five-axle tractor-semi.

Steer gently and smoothly when you are pulling trailers. If you make a sudden movement with your steering wheel, you could tip over a trailer. Follow far enough behind other vehicles (at least one second for each ten feet of your vehicle length, plus another second if going over 40 mph). Look far enough down the road to avoid being surprised and having to make a sudden lane change. At night, drive slow enough to see obstacles with your headlights before it is too late to change lanes or stop gently. Slow down to a safe speed **before** going into a turn.

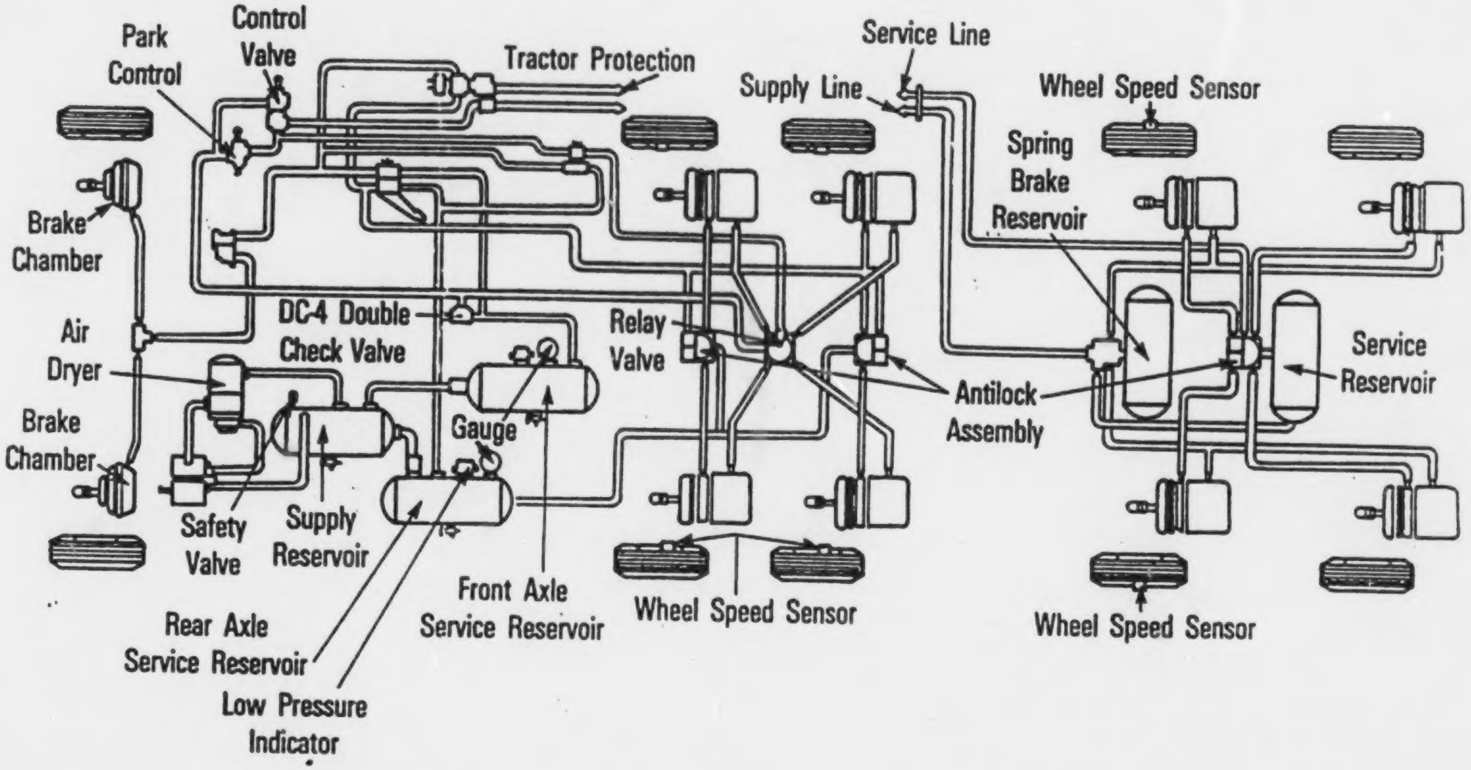
Control your speed whether fully loaded or empty. Large combination vehicles that are empty take longer to stop than when they are fully loaded. When lightly loaded, the very stiff suspension springs and strong brakes give poor traction and make it very easy to lock up the wheels. Your trailer can swing out and strike other vehicles. Your tractor can jackknife very quickly (Figure 6-2). You also must be very careful about driving "bobtail" tractors (tractors without semitrailers). Test have shown that bobtails can be very hard to stop smoothly. It takes them longer to stop than a tractor-semitrailer loaded to maximum gross weight.

In any combination rig, allow lots of following distance and look far ahead, so you can brake early. Don't be caught by surprise and have to make a "panic" stop.

When the wheels of a trailer lock up, the trailer will tend to swing around. This is more likely to happen when the trailer is empty or lightly loaded. This type of jackknife is often called a "trailer jackknife". This is shown in Figure 6-3.

Typical F.M.V.S.S. 121 Dual Air Brake System

4.1-327


Park Control
Control Valve
Tractor Protection
Service Line
Supply Line
Wheel Speed Sensor
Spring Brake Reservoir
Brake Chamber
Air Dryer
DC-4 Double Check Valve
Relay Valve
Antilock Assembly
Service Reservoir
Brake Chamber
Gauge
Safety Valve
Supply Reservoir
Front Axle Service Reservoir
Wheel Speed Sensor
Wheel Speed Sensor
Rear Axle Service Reservoir
Low Pressure Indicator

Visual 9.46

Truck Tractor System

Trailer System

H5-4

H7-3

SESSION IV

2 COMBINATION VEHICLES AND UNCOUPLING

Objective

Understanding the methods and procedures for coupling and uncoupling a combination vehicle safely.

Topic(s)

Techniques/Procedures and Activities

Overhead Transparencies

1.7-17	1.7-23
1.7-19	1.7-26
1.7-20	1.7-27
1.7-21	
1.7-22	

Handouts

Lecture: CDLM 6-8 to 6-12

Knowing how to couple and uncouple correctly is basic to safe operation of combination vehicles. Wrong coupling and uncoupling can be very dangerous. General coupling and uncoupling steps are listed below. There are differences between different rigs, so learn the details of coupling and uncoupling the truck(s) you will operate.

Step 1. Inspect Fifth Wheel
-- Check for damaged/missing parts.
-- Check to see that mounting to tractor is secure, no cracks in frame, etc.
-- Be sure that the fifth wheel plate is greased as required. Failure to keep the fifth wheel plate lubricated could cause steering problems because of friction between the tractor and trailer.
-- Check if fifth wheel is in proper position for coupling:
 ... Wheel tilted down towards rear of tractor.
 ... Jaws open.
 ... Safety unlocking handle in the automatic lock position.
-- if you have a sliding fifth wheel, make sure it is locked.
-- Make sure the trailer kingpin is not bent or broken.
Step 2. Inspect Area and Chock Wheels
-- Make sure area around the vehicle is clear.
-- Be sure trailer wheels are chocked or spring brakes are on.
-- Check that cargo (if any) is secured against movement due to tractor being coupled to the trailer.

Step 3. Position Tractor

-- Put the tractor directly in front of the trailer. (Never back under the trailer at an angle, because you might push the trailer sideways and break the landing gear.)

-- Check position, using outside mirrors, by looking down both sides of the trailer.

Step 4. Back Slowly

-- Back until fifth wheel just touches the trailer.

-- Don't hit the trailer.

Step 5. Secure Tractor

-- Put on the parking brake.

-- Put transmission in neutral.

Step 6. Check Trailer Height

-- The trailer should be low enough that it is raised slightly by the tractor when the tractor is backed under it. Raise or lower the trailer as needed. (If trailer is too low, tractor may strike and damage nose of trailer; if trailer is too high, it may not couple correctly.)

-- Check that the kingpin and fifth wheel are aligned.

Step 7. Connect Air Lines to Trailer

-- Check glad hand seals and connect tractor emergency air line to trailer emergency glad hand.

-- Check glad hand seals and connect tractor service air line to trailer service glad hand.

-- Make sure air lines are safely supported where they won't be crushed or caught while tractor is backing under the trailer.

Step 8. Supply Air to Trailer

-- From cab, push in "air supply" knob or move tractor protection valve control from the "emergency" to the "normal" position to supply air to the trailer brake system.

-- Wait until the air pressure is normal.

-- Check brake system for crossed air lines.

  ... Shut engine off so you can hear the brakes.

  ... Apply and release trailer brakes, listen for sound of trailer brakes being applied and released. You should hear the brakes move when applied and air escape when the brakes are released.

  ... Check air brake system pressure gauge for signs of major air loss.

-- When you are sure trailer brakes are working, start engine.

-- Make sure air pressure is up to normal.

Step 9. Lock Trailer Brakes

-- Pull out the "air supply" knob, or move the tractor protection valve control from "normal" to "emergency."

Step 10. Back Under Trailer

-- Use lowest reverse gear.

-- Back tractor slowly under trailer to avoid hitting the kingpin too hard.

-- Stop when the kingpin is locked into the fifth wheel.

Step 11. Check Connection for Security

-- Raise trailer landing gear slightly off ground.

-- Pull tractor gently forward while the trailer brakes are still locked to check that the trailer is locked onto the tractor.

Step 12. Secure Vehicle

-- Put transmission in neutral.

-- Put parking brakes on.

-- Shut off engine and take key with you so someone else won't move truck while you are under it.

Step 13. Inspect Coupling

-- Use a flashlight is necessary.

-- Make sure there is no space between upper and lower fifth wheel. If there is space, something is wrong (kingpin may be on top of closed fifth wheel jaws; trailer would come loose very easily).

-- Go under trailer and look into the back of the fifth wheel. Make sure the fifth wheel jaws have closed around the shank of the kingpin (see Figure 6-7).

-- Check that the locking lever is in the "lock" position.

-- Check that the safety catch is in position over locking lever. (On some fifth wheels the catch must be put in place by hand.)

-- If the coupling isn't right, don't drive the coupled unit; get it fixed.

Step 14. Connect the Electrical Cord and Check Air Lines

-- Plug the electrical cord into the trailer and fasten the safety catch.

-- Check both air lines and electrical line for signs of damage.

-- Make sure air and electrical lines will not hit any moving parts of vehicle.

Step 15. Raise Front Trailer Supports (Landing Gear)

-- Use low gear range (if so equipped) to begin raising the landing gear. Once free of weight, switch to the high gear range.

-- Raise the landing gear all the way up. (Never drive with landing gear only part way up as it may catch on railroad tracks or other things.)

-- After raising landing gear, secure the crank handle safely.

-- When full weight of trailer is resting on tractor:

    ... Check for enough clearance between rear of tractor frame and landing gear. (When tractor turns sharply it must not hit landing gear.)

... Check that there is enough clearance between the top of the tractor tires and the nose of the trailer.

Step 16. Remove Trailer Wheel Chocks

-- Remove and store wheel chocks in a safe place.

The following steps will help you to uncouple safely.

Step 1. Position Rig

-- Make sure surface of parking area can support weight of trailer.

-- Have tractor lined up with the trailer. (Pulling out at an angle can damage landing gear.)

Step 2. Ease Pressure on Locking Jaws

-- Shut off trailer air supply to lock trailer brakes.

-- Ease pressure on fifth wheel locking jaws by backing up gently (this will help you release fifth wheel locking lever.)

-- Put parking brakes on while tractor is pushing against the kingpin. This will hold rig with pressure off the locking jaws.

Step 3. Chock Trailer Wheels

-- Chock the trailer wheels if the trailer doesn't have spring brakes or if you're not sure. (The air could leak out of the trailer air tank, releasing its emergency brakes. The trailer could then move if it didn't have chocks.)

Step 4. Lower The Landing Gear

-- If trailer is empty -- lower the landing gear until it makes firm contact with ground.

-- If trailer is loaded -- after the landing gear makes firm contact with the ground, turn crank in low gear a few extra turns; this will lift some weight off the tractor. (Do not lift trailer off the fifth wheel.) This will

... make it easier to unlatch fifth wheel;

... make it easier to couple next time.

Step 5. Disconnect Air Lines and Electrical Cable

-- Disconnect air lines from trailer. Connect air line glad hands to dummy couplers at back of cab, or couple them together.

-- Hang electrical cable with plug down to prevent moisture from entering it.

-- Make sure lines are supported so they won't be damaged while driving the tractor.

Step 6. Unlock Fifth Wheel

-- Raise release handle lock.

-- Pull the release handle to "open" position.

- Keep legs and feet clear of the rear tractor wheels to avoid serious injury in case the vehicle moves.

Step 7. Pull Tractor Partially Clear of Trailer
- Pull tractor forward until fifth wheel comes out from under the trailer.
- Stop with tractor frame under trailer (prevents trailer from falling to ground if landing gear should collapse or sink).

Step 8. Secure Tractor
- Apply parking brake.
- Place transmission in neutral.

Step 9. Inspect Trailer Supports
- Make sure ground is supporting trailer.
- Make sure landing gear is not damaged.

Step 10. Pull Tractor Clear of Trailer
- Release parking brakes.
- Check the area and drive tractor clear.

Visual 1

List of Basic Steps in Coupling

Step 1. Inspect Fifth Wheel for Damage and to See if in Position to Be Coupled, i.e., Titled Down Towards Rear of Tractor

Step 2. Inspect Area for Obstacles and Chock Trailer Wheels

Step 3. Position Tractor Directly in Front of Trailer

Step 4. Back Slowly Until the Jaws of the Fifth Wheel Touch Pickup Apron of Trailer

Step 5. Secure Tractor and Get Out of Cab

Step 6. Inspect Trailer Height and Adjust if Too High or Too Low

Step 7. Connect Airlines Between the Tractor and Trailer

Step 8. Get Back in Cab and Air the Trailer

Step 9. Apply Trailer Brakes

Step 10. Back Tractor Until Fifth Wheel Engages Kingpin and Locks

Step 11. Pull Gently Forward to Test Connection

Step 12. Secure Tractor Against Rolling

Step 13. Get Out and Inspect Coupling

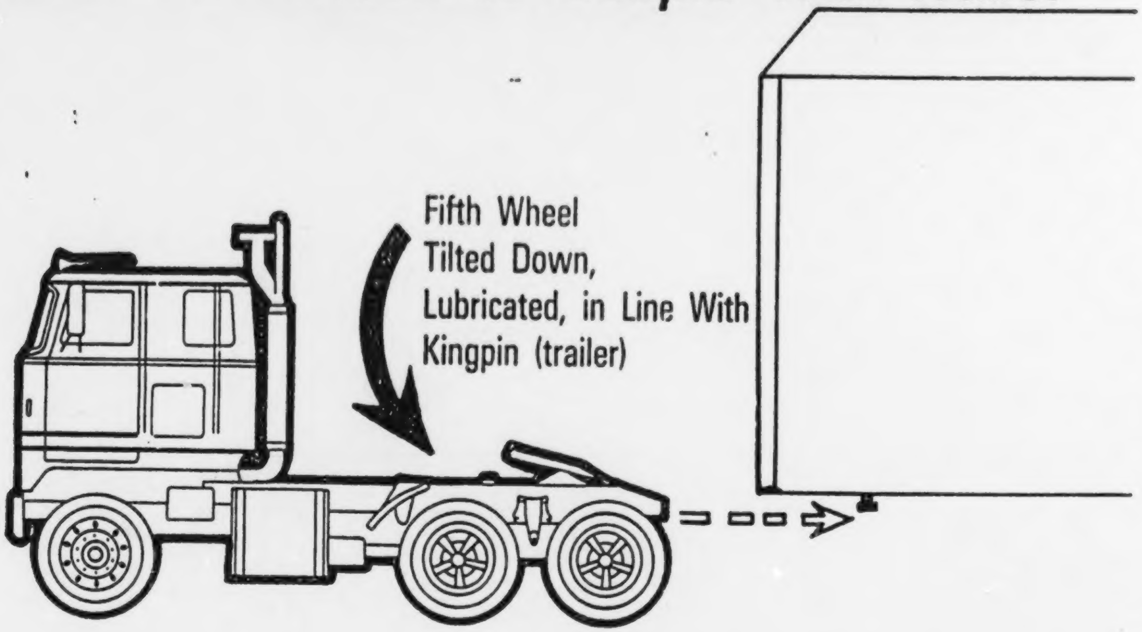
Step 14. Connect Electrical Cable to Trailer

Step 15. Raise and Secure Trailer Landing Gear

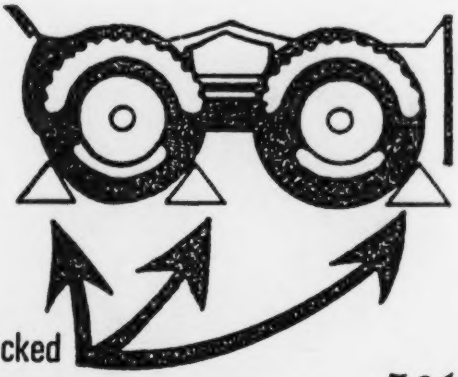
Step 16. Remove Trailer Chocks

1-10 H

Tractor in Position to Couple With Trailer


Fifth Wheel
Tilted Down,
Lubricated, in Line With
Kingpin (trailer)

- Inspect Fifth Wheel
- Position Tractor
- Back Slowly Till Jaws Touch Pickup Apron
- Secure the Tractor
- Inspect Tires and Check Trailer Wheels


Wheels Chocked

1.7-19

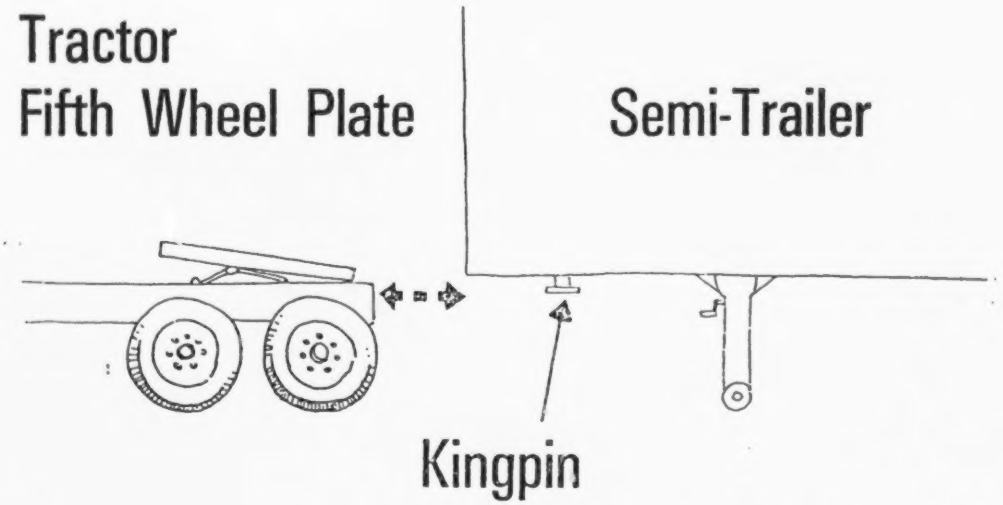
Visual 3

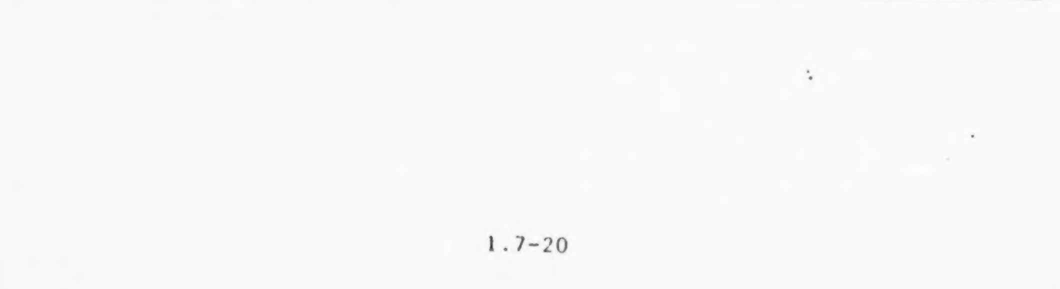
4-12-11

Visual 4

Proper Alignment Between Fifth Wheel and Trailer

Step 6. Check Trailer Height

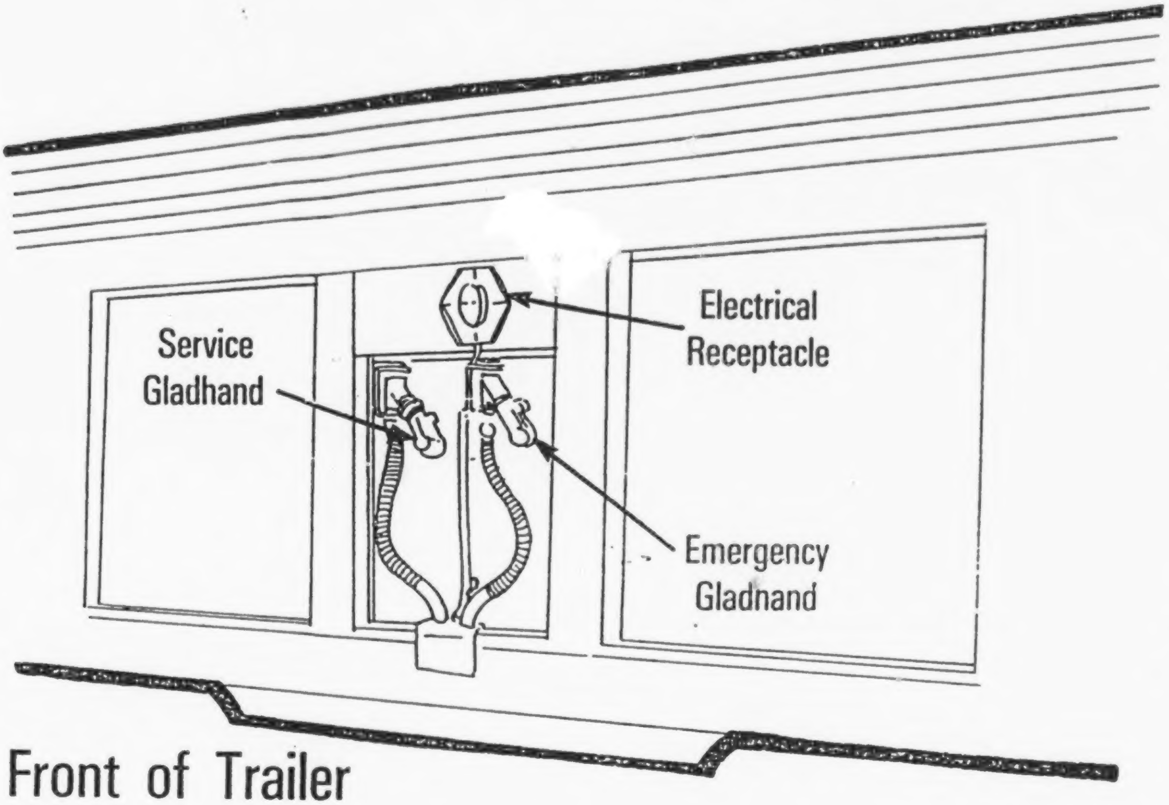

Tractor
Fifth Wheel Plate
Semi-Trailer
Kingpin


Semi-Trailer

Dotted Line Shows Proper Approach. Solid Lines Show Improper Approach Angles.

Visual 5

Connect Air Lines to Trailer


Service
Gladhand
Electrical
Receptacle
Emergency
Gladnand

Front of Trailer

Step 7.
- Connect Air Lines
  - Emergency to Emergency
  - Service to Service
    - Color Coded
    - Shape Coded
    - No Coding
- Use Caution for Slippery Surfaces
- Make Sure Air Lines Have Enough Slack

37 ✓

4-14 14

Visual 6

Coupling of Tractor-Trailer

Step 8. Supply Air to Trailer

- Move Tractor Protection Valve to "Normal"
- Apply Trailer Brake
- Check for Crossed Lines
- Make Sure Trailer Brakes Working
- Restart Engine

Step 9. Apply Trailer Brakes

Step 10. Back Under Trailer Slowly to Avoid Damage
Be Ready in Case Tractor Jumps Forward
Stop When 5th Wheel Engages Kingpin

52 ✓

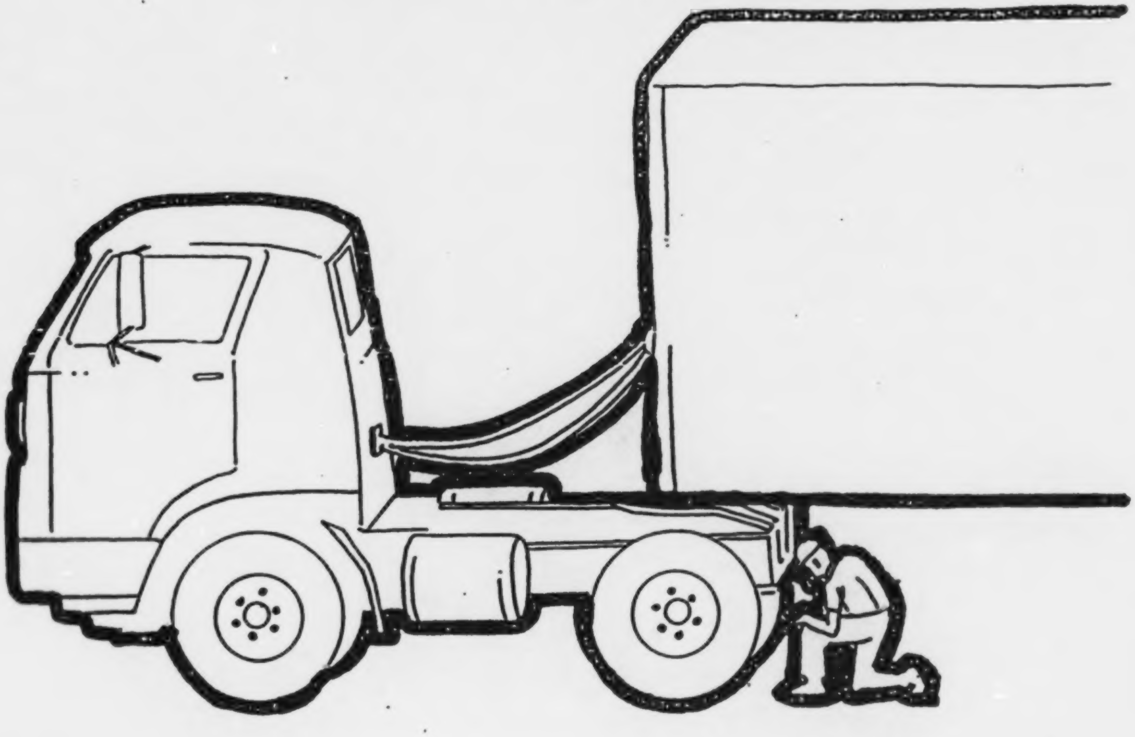
4-15 H

Inspect Coupling

Step 11. Check Connection for Security
Pull Tractor Gently Forward

Step 12. Secure Tractor

Step 13. Visually Inspect Coupling
- Use Flashlight
- Get Under Trailer and Check if –
  - 5th Wheel Engaged Shank Not Head of Kingpin
  - Jaws Closed Properly Around Shank of Kingpin
  - No Space Between Upper and Lower 5th Wheel
  - Locking Lever in "Lock" Position
  - Safety Catch in Position Over Locking Lever



4-16 H

Visual 10

Steps in Uncoupling

Step 1. Position Vehicle

Step 2. Apply Trailer Brake

Step 3. Secure Rig

Step 4. Lower Landing Gear

Step 5. Disconnect and Store Air Lines and Electrical Cable

Step 6. Release Fifth Wheel Latch

Step 7. Pull Tractor Partially Clear of Trailer

Step 8. Secure Tractor

Step 9. Check Trailer Supports

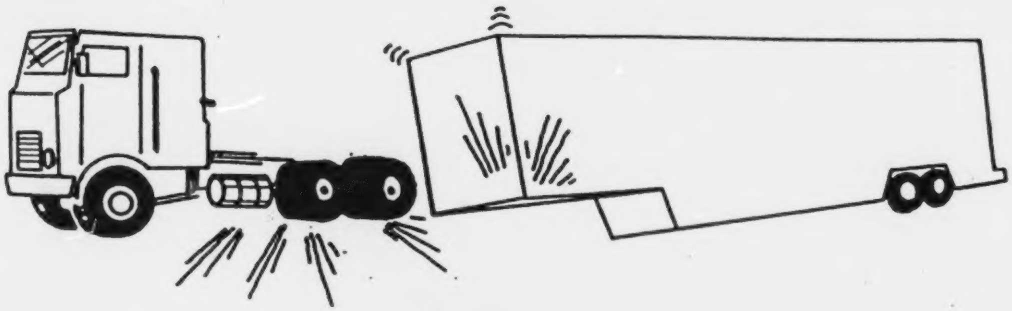
Step 10. Pull Tractor Completely Clear of Trailer

NOTE: Explain Pre-75 and post-75 (i.e. Maxi or Spring break)

4-19-H

Visual 11

Coupling and Uncoupling Hazards



Vehicle

Hazard	Result
Tractor Not Secured	Damage to Brake Lines
Trailer Brakes Not Functioning	Trailer Pushed Into Obstruction
Jaws Not Securely Fastened	Trailer Breaks Loose on the Road
Ground Not Firm for Uncoupling	Trailer Falls and Is Damaged
Trailer Not Chocked	Pushed or Rolls Into Obstruction

Driver

Hazard	Result
Climbing on Tractor	Falls From Slippery Surface
Working Under Unsupported Trailer (No Jackstand or Tractor Under Trailer Nose)	Injury When Landing Gear Collapses and Trailer Drops to the Ground

SESSION: IV

SUBJECT: Drugs, Alcohol and Drowziness

TIME ALLOTTED: 15 Min.

PAGE: 4 - 7

OBJECTIVES	TOPICS	TECHNIOUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. Recognizing the values of and procedures for being ready to drive.	1. Drugs, Alcohol, Fatigue	1. Lecture - Commercial Driver's Manual 2-46, 2-47, 2-48 1. Overhead Transparencies 5.5-29 5.5-30	1. Asking factual and specific questions.
2. Understanding the laws on driver's physical requirements for interstate transportation.	2. ICC Regulations on driver's physical requirements	2. Overhead Transparencies 5.5-23 Handouts 5.5-23	2. Proficiency Test.

SESSION IV

1 DRUGS, ALCOHOL AND DROWSINESS

Objective

Recognizing the values of and procedures for being ready to drive.

Topic(s)

Drugs, alcohol, Fatigue

Techniques/Procedures and Activities

Overhead Transparencies
5.5-29
5.5-30

Lecture: CDLM 2-45 to 2-48

Avoid drugs. There are no drugs that can overcome being tired. While they may keep you awake for a while, they won't make you alert. And eventually, you'll be even more tired than if you hadn't taken them at all. Sleep is the only thing that can overcome fatigue.

Drinking alcohol and then driving is a very serious problem. People who drink alcohol are involved in traffic accidents resulting in over 20,000 deaths every year. You should know:

- How alcohol works in the human body.
- How it affects driving.
- Laws regarding drinking and driving.
- Legal, financial, and safety risks of drinking and driving.

The Truth About Alcohol. There are many dangerous ideas about the use of alcohol. The driver who believes in these wrong ideas will be more likely to get into trouble. Here are some examples:

FALSE	THE TRUTH
Alcohol increases your ability to drive.	Alcohol is a drug that will make you less alert and reduce your ability to drive safely.
Some people can drink a lot and not be affected by it.	Everyone who drinks is affected by alcohol.
If you eat a lot first, you won't get drunk.	Food will not keep you from getting drunk.
Coffee and a little fresh air will help a drinker sober up.	Only time will help a drinker sober up - other methods just don't work.
Stick with beer - it's not as strong as wine or whiskey.	A few beers are the same as a few shots of whiskey or a few glasses of wine.

What is a Drink? It is the alcohol in drinks that affects human performance. It doesn't make any difference whether that alcohol comes from "a couple of beers" or from two glasses of wine or two shots of hard liquor.

All of the following drinks **contain the same amount of alcohol:**
-- A 12 ounce glass of 5% beer;
-- A 5 ounce glass of 12% wine;
-- A 1 1/2 ounce shot of 80 proof liquor.

How alcohol works. Alcohol goes directly from the stomach into the blood stream. A drinker can control the amount of alcohol which he or she takes in, by having fewer drinks or none. However, the drinker cannot control how fast the body gets rid of alcohol. If you have drinks faster than the body can get rid of them, you will have more alcohol in your body and your driving will be more affected. The amount of alcohol in your body is commonly measured by the Blood Alcohol Concentration (BAC).

What Determines Blood Alcohol Concentration. BAC is determined by the amount of alcohol you drink (more alcohol means higher BAC), how fast you drink (faster drinking means higher BAC), and your weight (a small person doesn't have to drink as much to reach the same BAC).

Alcohol and the Brain. Alcohol affects more and more of the brain as BAC builds up. The first part of the brain affected controls judgment and self control. One of the bad things about this is it can keep drinkers from knowing they are getting drunk. And of course, good judgment and self control are absolutely necessary for safe driving.

As blood alcohol concentration continues to build up, muscle control, vision, and coordination are affected more and more. Eventually, a person will pass out.

How Alcohol Affects Driving. All drivers are affected by drinking alcohol. Alcohol affects judgment, vision, coordination, and reaction time. It causes serious driving errors, such as:
-- Increased reaction time to hazards.
-- Driving too fast or too slow.
-- Driving in the wrong lane.
-- Running over the curb.
-- Weaving.
-- Straddling lanes.
-- Quick, jerky starts.
-- Not signaling, failure to use lights.
-- Running stop signs and red lights.
-- Improper passing.

These effects mean increased chances of a crash and chances of losing your driver´s license. Accident statistics show that the chance of a crash is much greater for drivers who have been drinking than for drivers who were not.
Besides alcohol, other legal and illegal drugs are being used more often. Laws prohibit possession or use of any drugs while on duty. They prohibit being under the influence of any "controlled substance"; an amphetamine (including "pep pills" and "bennies"); narcotics or any other substance which can make the driver unsafe. This could include a variety of prescription and over-the-counter drugs (cold medicines) which may make the driver drowsy or otherwise affect safe driving ability. However, possession and use of a drug given to a driver by a doctor is permitted if the doctor informs the driver that it will not affect safe driving ability.

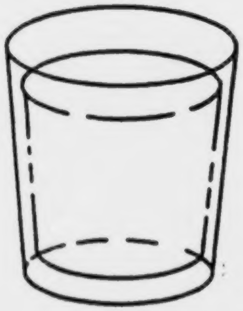
Pay attention to warning labels of legitimate drugs and medicines and to doctor´s orders regarding possible effects. Stay away from illegal drugs. Don´t use any drug that hides fatigue - the only cure for fatigue is rest. Alcohol can make the effects of other drugs much worse. The safest rule is don´t mix drugs with driving at all.

Use of drugs can lead to traffic accidents resulting in death, injury and property damage. Furthermore, it can lead to arrest, fines, and jail sentences. It can also mean the end of a person´s driving career.

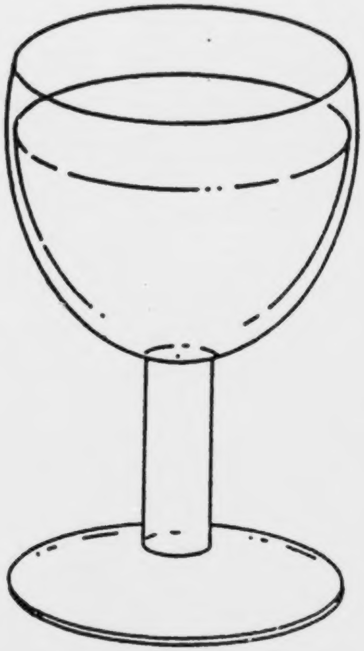
Once in a while, you may become so ill that you cannot operate a motor vehicle safely. If this happens to you, you must not drive. However, in case of an emergency you may drive to the nearest place where you can safely stop.

5.5-29

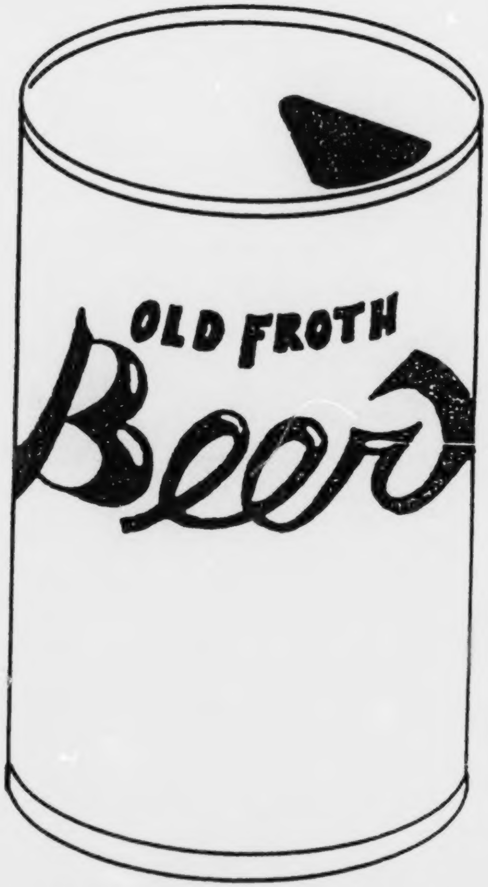
They're All the Same



1 1/2 oz. Liquor



5 1/2 oz. Glass of Wine

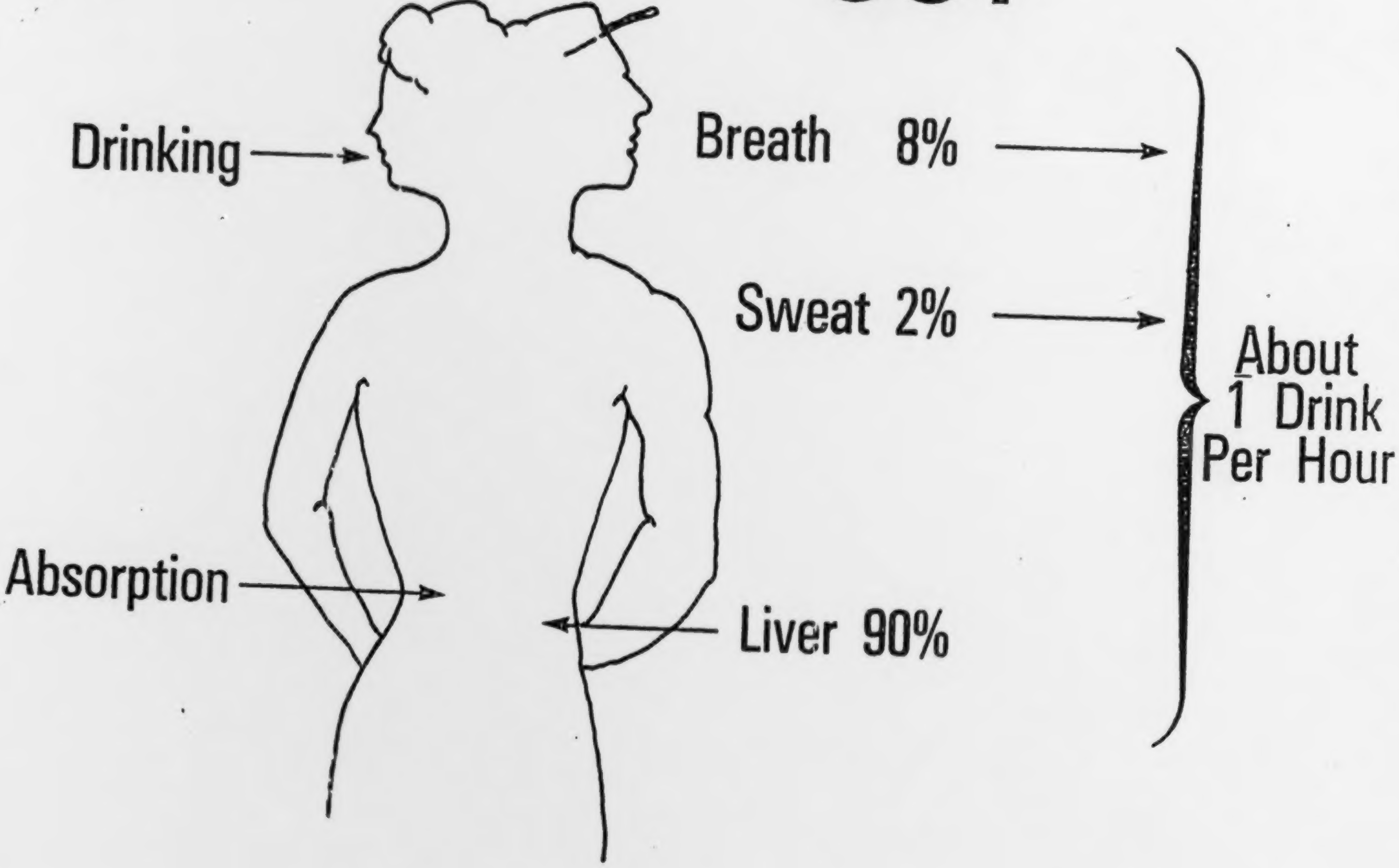

OLD FROTH
Beer

12 oz. Can of Beer

Visual 1

4-22

Alcohol In/Out



IN

OUT

Drinking

Absorption

Breath 8%

Sweat 2%

Liver 90%

About 1 Drink Per Hour

SESSION IV

2 DRUGS, ALCOHOL AND DROWSINESS

Objective

Understanding the laws on driver's physical requirements for interstate transportation.

Topic(s)

Regulations on driver's physical requirements.

Techniques/Procedures and Activities

Overhead Transparencies
    5.5-23
    5.5-24
    5.5-30
Handouts
    5.5-23

CDLM 2-48

Physical Requirements for Interstate Truckers

- Vision
  - Acuity-20/40 Vision
  - Peripheral Vision-at Least 70 Degrees in Each Eye
  - Color Perception-Distinguish Red and Green
  - Eye Check Every 24 Months
- Hearing
  - Have Ability to Hear Forced Whisper at 5 Feet
- Stamina
  - To Meet Job Requirements, e.g., Loading, Unloading
- Disqualifications
  - Loss of Limb(s) or Disease Which Impairs Limbs
  - Chronic Illness Which Seriously Effect Driving
    Examples:
    - Diabetes Melitus
    - Coronary Insufficiency
    - Alcoholism
- Required Physical Examination
  - Every 2 Years
  - At Carrier's Discretion
  - After Serious Injury or Illness
- Certification by Physician
  - Must Be Carried at All Times
  - As Important as Driver's License

u9 ✓

List of Good and Bad Diet Habits

Essentials of a Good Diet

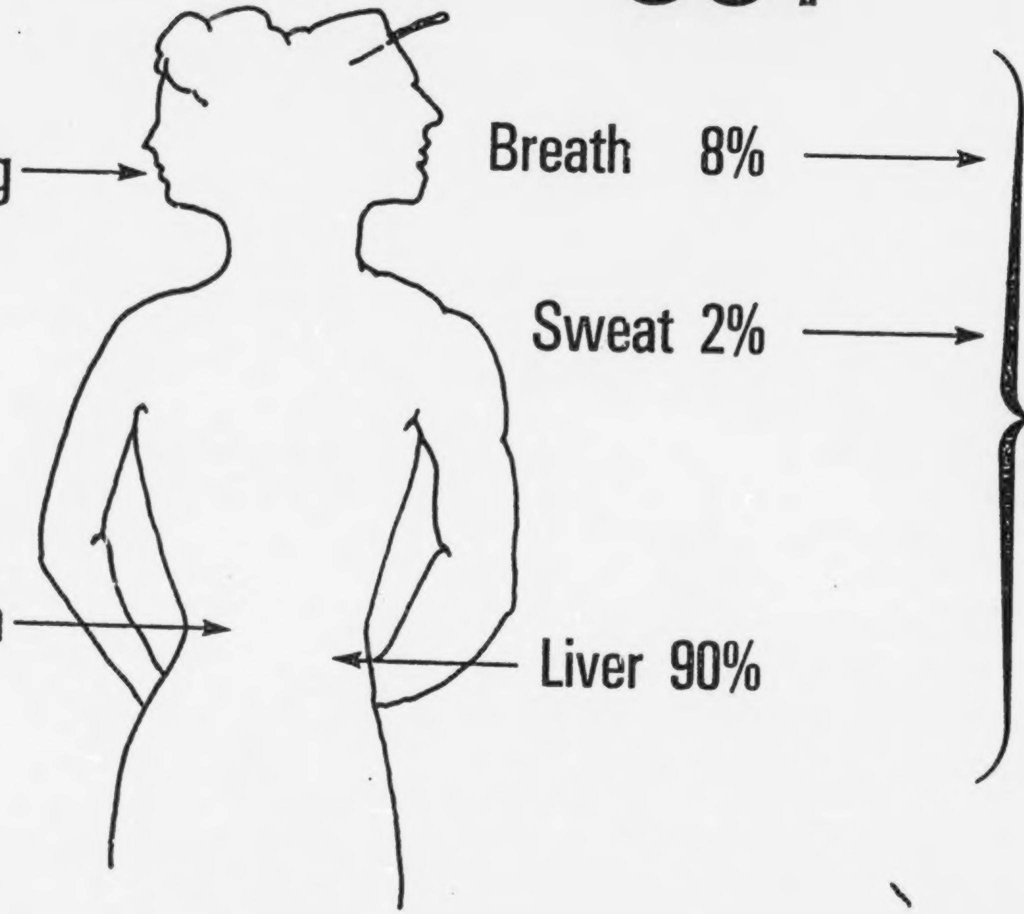
- Wide Variety of Foods
  - Four Basic Food Groups
    - Milk Group
    - Meat Group
    - Vegetable/Fruit Group
    - Bread/Cereal Group
  - Lack of Variety = Lack of Necessary Vitamins
- Avoid Too Many Calories
  - Calories = Energy
  - Take in Only What You Need
  - Too Many Calories = Overweight, Fatique and Lack of Energy
- Avoid Extremes of Hunger and Overeating
  - Hunger = Lack of Energy
  - Overeating = Stuffy, Lethargic Feeling
- Example of Good Diet
  - Breakfast
    - Fruit Juices
    - Multivitamin
    - Bowl of Grain Cereal Topped With Fruit
    - Whole Wheat Toast
    - Nonfat Milk
  - Snacks
    - Avoid Quick Sugar Snacks (Candy Bars) and Junk Food
    - Try Dried Fruit or Oatmeal Cookies

50 ✓

Alcohol In/Out

IN

OUT



Drinking

Absorption

Breath 8%

Sweat 2%

Liver 90%

About 1 Drink Per Hour

SESSION: IV

SUBJECT: Test Taking Skills

TIME ALLOTTED: 5 Min.

PAGE: 4 - 8

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
1. The understanding and knowledge of all Section of Test-taking Skill from Session I, II, and III	1. Recap/Procedure all Test-taking Skill from Session I, II, III	1. Lecture and Past Lecture of Session I, II, III	1. Proficiency test.
2. To understand the procedure for the end of the test.	2. End of test review	2. a. Lecture instructors manual b. Overhead transparency	2. Proficiency test

PROCEDURE FOR THE END OF THE TEST

1) GO BACK AND COMPLETE ALL SKIPPED QUESTIONS.

2) MAKE SURE ALL ANSWERS ARE FILLED IN ON THE ANSWER SHEET.

3) MAKE SURE EACH ANSWER FILLED IN MATCHES THE RIGHT QUESTION I.E. ANSWER #3 WITH QUESTION #3.

SESSION: IV

SUBJECT: Proficiency Test

TIME ALLOTTED: 2 hours

PAGE: 4 - 9

OBJECTIVES	TOPICS	TECHNIQUES/PROCEDURES AND ACTIVITIES	EVALUATION
Knowkedge of student material covered in this and previous sessions (final exam)	103 questions	Test question answer sheet	80% passage (maximum 20 wrong)

Revised 09/20/89
Revised 10/09/89
Revised 06/11/90

SESSION IV

Test 4

FINAL

Name: ______________________________

1. The parking brake in an Air Brake System should be tested while the vehicle is:
   a) moving slowly
   b) while backing
   c) parked
   d) going downhill

2. You are traveling down a long, steep hill. Your brakes begin to fade and then fail. What should you do?
   a) pump the brake pedal
   b) free wheel
   c) downshift
   d) look for an escape ramp or escape route

3. The most common cause of serious vehicle skids is:
   a) poorly adjusted brakes
   b) tire blow outs
   c) driving too fast for road conditions
   d) bad tires

4. What should you do if your vehicle hydroplanes?
   a) accelerate slightly
   d) stop
   c) start stab braking
   d) release the accelerator

5. Which fires can you put out with water?
   a) gasoline fires
   b) propane fires
   c) tire fires
   d) electrical fires

6. A driver's trip log, if required:
   a) is also called a "tachograph"
   b) may be brought up to date at end of the trip
   c) may be brought up to date once a week
   d) must be shown immediately when an officer requests it

7. Brakes can get wet when you drive through a heavy rain. Wet brakes can cause:
   a) wheel lockup
   b) trailer jackknife
   c) both of the above
   d) none of the above

8. You are checking your steering and exhaust systems during a pre-trip inspection. Which of these statements is true?
   a) leaks in the exhaust system are not a problem if they are outside the cab
   b) some leakage of power steering fluid is normal
   c) steering wheel play of more than 10 degrees (2 inches on a 20-inch steering wheel) can make it hard to steer
   d) none of the above

9. Play in fan belts should be no more than:
   a) 1/2 inch
   b) 1 inch
   c) 2 inches
   d) 2 1/2 inches

10. Which component is NOT a steering component:
   a) drag link
   b) shackle
   c) kingpin
   d) tie rod

11. Minimum tread depth required on a steering axle tire is:
   a) 1/32 inch
   b) 2/32 inch
   c) 3/32 inch
   d) 4/32 inch

12. The minimum tread depth required on a trailer tire is:
   a) 1/32 inch
   b) 2/32 inch
   c) 4/32 inch
   d) 6/32 inch

13. The low air warning device will actuate at what air pressure?
   a) 60 PSI
   b) 90 PSI
   c) 120 PSI
   d) 150 PSI

14. There are seven spring leafs in a spring assembly; not counting the main leaf, what is the minimum number of leafs that must be broken to have the vehicle declared out of service:
   a) 1
   b) 4
   c) 2
   d) 3

15. When coupling, which should be done **before** the others?
   a) raise the landing gear
   b) depress the red charge button
   c) connect the glad hands
   d) visually inspect the fifth-wheel locking mechanism

16. When coupling, how far should the tractor be backed up before the air lines are coupled?
   a) so the frame of the tractor is just under the nose of the trailer
   b) so the fifth wheel is about one foot from the nose of the trailer
   c) so the fifth wheel just touches the nose of the trailer
   d) until the kingpin locks into the fifth wheel jaws

17. After backing under the trailer, and the kingpin locks into the fifth wheel jaws, and the landing gear is not firmly on the ground, the driver pulls forward with the hand valve down. Why?
a) to check trailer brakes
b) to ensure proper fifth wheel alignment
c) to check tractor brakes
d) to check the coupling

18. When uncoupling, which of the four items should be done before the others?
a) lower the landing gear
b) uncouple the air lines
c) set the brakes
d) pull out

19. A road that rises 5 feet for every 100 feet of level distance has a grade of:
a) 5%
b) 10%
c) 20%
d) 100%

20. Which of these statements about downshifting for a long downhill grade is true?
a) It should not be done with automatic transmissions.
b) It allows engine compression and friction to help slow the vehicle.
c) The proper time to downshift is just after the vehicle starts down the hill.
d) None of the above.

21. A pyrometer:
a) measures gradeability
b) measures exhaust temperature
c) is used during a truck runaway
d) measures roadway grades

22. A general rule of thumb for descending a down grade with the newer aerodynamic trucks is to:
a) use the same gear as going up the grade
b) use one gear lower than when going up a grade
c) use one gear higher than going up a grade
d) use two gears higher than going up a grade

23. When braking going down a downgrade:
a) use the intermittent braking technique
b) use the trailer hand brake
c) light, steady braking pressure
d) use the brake fade technique

24. Brake fade is **NOT** caused by:
   a) brake drums heating up
   b) runaway ramps
   c) glazing of linings
   d) none of the above

25. A retarder:
   a) should not be used to slow down for an exit
   b) should be used when it is slippery
   c) should be used on downhill situations
   d) all of the above

26. What is the basic rules about cargo weight?
   a) makes no difference
   b) don´t overload the vehicle
   c) distribute the weight properly on the tractor and trailer
   d) b and c

27. According to Federal Regulations, when must cargo be examined?
   a) within the first 25 miles
   b) if driver changes duty status
   c) after 3 hours or 150 miles
   d) all of the above

28. Why are loads tied down and secured?
   a) to make more work for the driver
   b) to prevent shifting or falling of the cargo
   c) to make tractor brakes work more efficiently
   d) none of the above

29. What are the legal types of tie down´s?
   a) tarps, binding straps, or bailing twine
   b) straps, chains or ropes
   c) a and b
   d) none of the above

30. What are two types of chain binders?
   a) lever type and ratchet type
   b) right hand and left hand type
   c) air and electric type
   d) screw type

31. The pitman arm, tie rods, and spindles are components of:
   a) the steering axle
   b) single axle drive axle
   c) tandem axle drive axle
   d) both single and tandem axles

32. Maximum steering play should not exceed:
   a) 1 degree
   b) 5 degrees
   c) 10 degrees
   d) 25 degrees

33. When both axles drive on a tandem axle configuration, this is known as:
    a) tandem axle
    b) pusher axle
    c) tag axle
    d) twin screw

34. A disc wheel is commonly called a:
    a) budd wheel
    b) spoke wheel
    c) drive axle wheel
    d) trailer wheel

35. On a tandem axle tractor that has radial tires on the steering axle:
    a) you must only have radial tires on the tandems
    b) you must only have bias ply tires on the tandems
    c) you must have either radials or bias ply tires matching on the axle
    d) can have some radials and some bias ply on the tandems

36. You are checking your tires for a pre-trip inspection. Which of these statements is true?
    a) Tires of mismatched sizes should not be used on the same vehicle.
    b) Radial and bias ply tires cannot be used together on the same axle.
    c) A tread depth of 2/32 inch is safe for the front tires.
    d) A & B

37. Truck tires must be replaced:
    a) when the front tires have less than 4/32 inch of tread depth
    b) when the drive tires have less than 4/32 inch of tread depth
    c) when any tire - front or drive - has less than 4/32 inch of tread depth
    d) none of the above

38. Which of the answers below is an enemy of truck tires?
    a) road hazards (objects on road)
    b) sliding
    c) road salt
    d) prolonged driving

39. The air compressor is driven:
    a) by an electric motor
    b) by a turbo charger
    c) by belt or gear
    d) self contained

40. The governor in the air system:
    a) allows air to flow in just one direction
    b) controls the trailer brakes
    c) controls maximum pressure in the air system
    d) must be 90 degrees with the pushrod when fully applied

41. An additional component that removes oil and water from the air system is the:
   a) air dryer
   b) air inter-cooler
   c) wet tank
   d) dry tank

42. A safety valve will "pop off" in most air systems at:
   a) 40 PSI
   b) 50 PSI
   c) 150 PSI
   d) 180 PSI

43. The treadle valve is the:
   a) hand valve
   b) foot valve
   c) parking brake valve
   d) charge valve

44. When applying the hand valve:
   a) all brakes apply
   b) just the steering brakes apply
   c) just the drive wheel brakes apply
   d) just the trailer brakes apply

45. The hand valve should not be used when:
   a) slowing the vehicle down
   b) hooking up
   c) checking the hook up
   d) sliding the trailer tandems

46. When applying the tractor protection valve air flows out the:
   a) blue service line
   b) red emergency line
   c) quick release valve
   d) air dryer

47. Air flows through the service line when:
   a) the foot brake is applied
   b) the hand brake is applied
   c) either the hand brake or foot brake is applied
   d) no brakes are applied

48. The metal connectors on the ends of the air lines are:
   a) air connectors
   b) slack adjusters
   c) push rods
   d) glad hands

49. What brake chamber can be used as a parking brake?
    a) single chamber
    b) pancake chamber
    c) loaded chamber
    d) spring brake chamber

50. A driver must have an ICC physical to drive?
    a) intrastate
    b) any motor vehicle
    c) interstate
    d) both A & C

51. Which type of brakes do most tractor-trailer units have?
    a) hydraulic
    b) "S" cam
    c) wedge
    d) disk

52. When traveling down a highway, the brakes will automatically apply when the air pressure drops below:
    a) 45 PSI
    b) 90 PSI
    c) 120 PSI
    d) 150 PSI

53. A symptom of low air pressure is:
    a) parking brakes on tractor will not apply
    b) parking brake valve cannot be released to off position
    c) wet tank safety valve "popping off"
    d) air operated windshield wipers cannot be shut off

54. If the trailer brakes are dragging but not fully applied, a symptom may be:
    a) air pressure at 20 PSI
    b) air lines hooked up backwards
    c) hand valve down slightly
    d) slack adjusters adjusted too loose

55. Moisture in the air tanks should be drained:
    a) hourly
    b) daily
    c) weekly
    d) monthly

56. Which of these is a good rule to follow when driving at night?
    a) look directly at oncoming headlights
    b) wear sun glasses
    c) keep your speed slow enough to stop within the range of your headlights
    d) keep your instrument lights bright

57. Medical certificates must be renewed every:
    a) two years
    d) five years
    c) year
    d) four years

58. Except for logging vehicles and buses, the maximum gross weight which can be carried by one axle of a motor truck is:
    a) 14,500 lb..
    b) 8,000 lb..
    c) 20,000 lb..
    d) 9,000 lb..

59. How do you test hydraulic brakes for a leak?
    a) with the vehicle stopped, pump the pedal three times, apply firm pressure, then hold for five seconds and see if the pedal moves
    b) step on brake hard while going 20 mph
    c) move the vehicle slowly and see if it stops when the brake is applied
    d) move the vehicle slowly and see if it stops when the brake is applied

60. You are driving a 40 foot vehicle at 45 mph. Driving conditions are ideal (dry pavement, good visibility). the least amount of space that you should keep in front of your vehicle to be safe is the distance you travel in:
    a) 4 seconds
    b) 6 seconds
    c) 3 seconds
    d) 5 seconds

61. A moving vehicle ahead of you has a red triangle with an orange center on the rear. What does this mean?
    a) it may be a slow moving vehicle
    b) wide load
    c) the vehicle is hauling hazardous materials
    d) it may be oversized

62. How far should a driver look ahead of the vehicle while driving?
    a) 12-15 seconds
    b) 22-50 seconds
    c) 9-12 seconds
    d) 18-21 seconds

63. Which of these statements about cargo loading is true?
a) if cargo is loaded by the shipper, the driver is not responsible for overloading
b) you can't get an overweight permit in New Hampshire
c) the legal maximum weight allowed by a state is safe for all driving conditions
d) state regulations dictate legal weight limits

64. Which of these statements about downshifting is true?
a) when you downshift for a hill, you should do so after you start down the hill
b) when you downshift for a curve, you should do so after you enter the curve
c) when you downshift for a curve, you should do so before you enter the curve
d) none of the above

65. Which of these statements about tires and hot weather driving is true?
a) if a tire is too hot to touch, you should drive on it to cool it off
b) kissing tires are all right to run
c) you should inspect your tires more often
d) recapped tires are less likely to fail in hot weather than new tires

66. Cargo inspections:
a) are only needed if hazardous materials are being hauled
b) are not needed if company loaded the truck
c) should be done after every break during driving
d) should be done every 6 hours or 300 miles

67. Which of these statements about staying alert to drive is true?
a) a half-hour break for coffee will do more to keep you alert than a half-hour nap
b) there are drugs that can overcome being tired
c) foam cups of coffee will keep you alert
d) the only thing that can cure fatigue is sleep

68. Which of these statements about brakes is true?
a) brakes have more stopping power when they get very hot
b) brake drums with cracks work better
c) the heavier a vehicle or the faster it is moving, the more heat the brakes have to absorb to stop it
d) brake drums cool very quickly

69. You are driving a 40 foot vehicle at 35 mph. Driving conditions are ideal (dry pavement, good visibility). What is the least amount of space that you should keep in front of your vehicle to be safe is the distance you travel in:
a) 4 seconds
b) 6 seconds
c) 3 seconds
d) 5 seconds

70. With certain specified exceptions, the load on any vehicle may not extend beyond the rear bumpers or tires more than:
a) 3 feet
b) 5 feet
c) 2 feet
d) 4 feet

71. If a vehicle is loaded with very little weight on the drive axle, what can happen?
a) damage to drive axle tires
b) easy to steer
c) poor traction
d) better handling

72. You are checking your wheels and rims during a pre-trip inspection. Which of these statements if true?
a) cracked wheels or rims can be used if they have been welded
b) mismatched wheels can be used
c) rust around wheel nuts may mean that they are loose
d) mismatched lock rings can be used on the same vehicle

73. For an average driver, driving 55 mph on dry pavement, it will take about ___ to bring the vehicle to a stop:
a) half the length of a football field
b) the length of two football fields
c) twice the length of the vehicle
d) the length of one football field

74. You are driving a heavy vehicle and must exit a highway using an offramp that curves downhill. You should:
a) slow down to a safe speed before the turn
b) use regular speed limit
c) use the posted speed limit for the offramp
d) wait until you are in the turn before downshifting

75. You must park on the side of a level, straight, two-lane road. Where should you place the three reflective triangles?
   a) one within 10 feet of the rear of the vehicle, one about 100 feet to the rear, and one about 100 feet from the front of the vehicle
   b) one within 20 feet of the rear of the vehicle, one about 200 feet to the rear, and one about 100 feet to the rear
   c) one within 10 feet of the rear of the vehicle, one about 100 feet to the rear, and one about 200 feet to the rear
   d) one about 50 feet from the rear of the vehicle, one about 100 feet to the rear, and one about 100 feet from the front of the vehicle

76. How do you correct a rear-wheel acceleration skid?
   a) apply the brake
   b) apply brake and push in on the clutch
   c) increase acceleration to the wheels
   d) stop accelerating and push in the clutch

77. Which of these statements about backing a heavy vehicle is true?
   a) when you use a helper, he/she should use clear voice (spoken) signals
   b) it is more unsafe to back toward the right side of the vehicle than to the driver's side
   c) you should avoid backing whenever you can
   d) it is safer to back toward the right side of the vehicle than to the passengers side

78. Which of these statements about drinking alcohol is true?
   a) a few beers have the same effect on driving as a few shots of whiskey
   b) coffee will sober up a person right away
   c) some people aren't affected by drinking
   d) coffee and fresh air can sober a person up

79. As the Blood Alcohol Concentration (BAC) goes up, what happens?
   a) the person becomes more dangerous if allowed to drive
   b) the drinker can sober up in less time
   c) the effects of alcohol decrease
   d) none of the above

80. Measured from the road surface, the maximum legal height of any vehicle and load not needing a permit is:
   a) 13 feet 6 inches
   b) 15 feet 6 inches
   c) 12 feet 6 inches
   d) 14 feet 6 inches

81. Stab braking:
  a) involves locking the wheels
  b) heavy on brakes
  c) should never be used
  d) involves steady pressure on the brake pedal

82. Your vehicle is in a traffic emergency and may collide with another vehicle if you do not take action. Which of these is a good rule to remember at such a time?
  a) heavy vehicles can almost always turn more quickly than they can stop
  b) heavy on the brakes and stop
  c) stopping is always the safest actin in a traffic emergency
  d) leaving the road is always more risky than hitting another vehicle

83. The length limit for any single motor vehicle, except for auxiliary parts, is:
  a) 45 feet
  b) 60 feet
  c) 40 feet
  d) 50 feet

84. Driving under the influence of any drug which makes you drive unsafe is:
  a) against the law
  b) permitted in some states
  c) permitted if it is prescribed by a doctor
  d) permitted if it is a diet pill or cold medicine

85. Which of these statements about using mirrors is true?
  a) there are "blind spots" that your mirror cannot show you
  b) only look when you need to
  c) you should look at a mirror for several seconds at a time
  d) a lane change requires you to look at the mirrors twice

86. You should avoid driving through deep puddles or flowing water. But if you must, what will keep your brakes working?
  a) applying hard pressure on both the brake pedal and accelerator after coming out of the water
  b) do not apply brakes
  c) gently pressing the brake pedal while driving through the water
  d) disconnecting the steering axle brakes after coming out of the water

87. You do not have a Hazardous Materials Endorsement on your Commercial Driver License. When can you legally haul hazardous materials?
a) only when the load does not require placards
b) when you have 3,000 pounds or more
c) never
d) only when the shipment will not cross the state lines

88. Which of these statements about double-clutching and shifting is true?
a) you can use the sound of the engine to tell you when to shift
b) never use the clutch
c) it should not be done when the road is slippery
d) you must use both clutch pedals

89. The key principle in balancing cargo weight is to keep the load:
a) to the rear
b) high as possible
c) to the front
d) centered

90. 8′ logs should have at least ____ tiedown(s).
a) 3
b) 5
c) 2
d) 4

91. If a straight vehicle (not trailer or articulation) goes into a front-wheel skid, it will:
a) go straight ahead but will turn if you turn the steering wheel
b) slide sideways and stop
c) slide sideways and spin out
d) go straight ahead even if the steering wheel is turned

92. Which of these is the most important thing to remember about emergency braking?
a) never do it without downshifting first
b) disconnecting the steering axle brakes will keep the vehicle in a straight line
c) if the wheels are skidding, you cannot control the vehicle
d) none of the above

93. The center of gravity of a load:
a) can make a vehicle more likely to roll over on curves
b) is only a problem if the vehicle is overloaded
c) should be kept as high as possible
d) none of the above

94. Which of these statements about speed management is true?
    a) as the speed of a vehicle doubles, its stopping distance also doubles
    b) choose a driving speed that lets you stop in the space that you can see ahead
    c) always travel five miles over the speed limit
    d) empty trucks always stop in a shorter distance than fully loaded ones

95. When a vehicle is carrying a load at night, which extends four feet or more beyond the rear of the body, there must be ____ at the extreme end of the load.
    a) 2 red lights
    b) 3 red lights
    c) 1 red light
    d) 1 red flag

96. If the trailer begins to drift off of the curved path while backing, you turn the wheel:
    a) away from the drift
    b) toward the drift
    c) not at all
    d) either way would help

97. To back the trailer efficiently, the driver should use:
    a) the right mirror
    b) the left mirror
    c) both mirrors
    d) none of the mirrors

98. To do an alley dock, the driver should:
    a) get out of the truck
    b) use helper when possible
    c) back the trailer while turning 90 degrees
    d) none of the above

99. Whenever backing cannot be avoided always:
    a) check clearances before starting
    b) use the horn and flashers
    c) use a spotter if possible
    d) all of the above

100. When an attempt at backing has failed, and the trailer is not in the proper position, it is necessary to:
    a) pull up and try again
    b) go on to the next job
    c) keep on backing
    d) ask someone else to back it up for you

Read the following sentences carefully. Indicate your answer by placing an a for **True** and a **b** for **False**.

101. When backing always steer in the opposite direction of the desired trailer path, and then follow it.
    a) True
    b) False

102. Avoid backing whenever possible.
    a) True
    b) False

103. Always do blind side backing if possible.
    a) True
    b) False

SESSION I II III [✓ IV]
(Circle Session Number)

Answer Sheet

Name: MASTER

Date: Revised 6/11/90

1. A B ● D
2. A B C ●
3. A B ● D
4. A B C ●
5. A B ● D
6. A B C ●
7. A B ● D
8. A B ● D
9. A ● C D
10. [illegible] ● C D
11. A B C ●
12. A ● C D
13. ● B C D
14. A B ● D
15. A B C ●
16. A B ● D
17. A B C ●
18. A B ● D
19. ● B C D
20. A ● C D
21. A ● C D
22. A ● C D
23. A B ● D
24. A ● C D
25. A B ● D
26. A B C ●
27. A B C ●
28. A ● C D
29. A ● C D
30. ● B C D
31. ● B C D
32. A B ● D
33. A B C ●
34. ● B C D
35. A B ● D
36. A B C ●
37. ● B C D
38. ● B C D
39. A B ● D
40. A B ● D
41. ● B C D
42. A B ● D
43. A ● C D
44. A B C ●
45. ● B C D
46. A ● C D
47. A B ● D
48. A B C ●
49. A B C ●
50. A B C ●
51. A ● C D
52. ● B C D
53. A ● C D
54. A B ● D
55. A ● C D
56. A B ● D
57. ● B C D
58. A B ● D
59. ● B C D
60. A B C ●
61. ● B C D
62. ● B C D
63. A B C ●
64. A B ● D
65. A B ● D
66. A B ● D
67. A B C ●
68. A B ● D
69. ● B C D
70. A B C ●
71. A B ● D
72. A B ● D
73. A B C ●
74. ● B C D
75. ● B C D
76. A B C ●
77. A B ● D
78. ● B C D
79. ● B C D
80. ● B C D
81. ● B C D
82. ● B C D
83. A B ● D
84. ● B C D
85. ● B C D
86. A B ● D
87. ● B C D
88. ● B C D
89. A B C ●
90. A B ● D
91. A B C ●
92. A B ● D
93. ● B C D
94. A ● C D
95. A B ● D
96. A ● C D
97. A B ● D
98. A ● C D
99. A B C ●
100. ● B C D
101. ● ~~●~~ C D
102. ● B C D
103. A ● C D

TEST IV REFERENCE

1. 5-8
2. 2-40
3. 2-41
4. 2-21
5. 2-44
6. FMCSR Info.
7. 2-30
8. 2-2
9. State Insp. Info.
10. 2-2
11. 2-29/2-2
12. 2-29/2-2
13. 5-4
14. 2-3
15. 6-8
16. 6-9
17. 6-10
18. 6-11
19. Drivers Info
20. 2-33
21. Driver Info
22. 2-33
23. 2-33
24. 2-33
25. 2-15
26. 3-2
27. 2-12/3-1
28. 3-5
29. 3-5
30. 3-5
31. 2-2
32. 2-2
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45. 6-3
46. 6-6
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